

Endogenous Preferences: The Cultural Consequences of Markets and other Economic Institutions

SAMUEL BOWLES

University of Massachusetts at Amherst

Thanks to Eric Verhoogen, James Heintz, Stephanie Eckman, Nicole Huber, and Melissa Osborne for research assistance, to the University of Siena for providing an unparalleled environment for research and writing, to Robert Boyd, Colin Camerer, Robert Cialdini, Lilia Costabile, Joshua Cohen, Gerald Cohen, Martin Daly, Peter Dorman, Catherine Eckel, Marcus Feldman, Ernst Fehr, Nancy Folbre, Christina Fong, Bruno Frey, Herbert Gintis, Karla Hoff, Daniel Kahneman, Melvin Kohn, David Kreps, Timur Kuran, George Loewenstein, Elinor Ostrom, Bentley MacLeod, Paul Malherbe, Karl Ove Moene, Casey Mulligan, Richard Nisbett, Ugo Pagano, Jean-Philippe Platteau, John Roemer, Susan Rose-Ackerman, Paul Romer, Paul Rozin, Andrew Schotter, Paul Seabright, Gil Skillman, Peter Skott, Rohini Somanathan, Hillel Steiner, Philippe van Parijs, Burton Weisbrod, Elisabeth Wood, Erik Olin Wright, Viviana Zelizer, and two anonymous referees for guidance in the literatures covered here and comments on an earlier draft, and to the MacArthur Foundation for financial support. Correspondence to bowles@econs.umass.edu.

1. *Hobbes' Fiction*

[Let us] . . . return again to the state of nature, and consider men as if but even now sprung out of the earth, and suddenly (like mushrooms), come to full maturity, without any kind of engagement with each other.

Thomas Hobbes ([1651]1949, p. 100)

If friends make gifts, gifts make friends. . . . Thus do primitive people transcend the Hobbesian chaos.

Marshall Sahlins (1972, p. 186)

MARKETS AND OTHER economic institutions do more than allocate goods and services: they also influence the evolution of values, tastes, and personalities. Economists have long assumed otherwise; the axiom of exogenous preferences is as old as liberal political philosophy itself. Thomas Hobbes' mushroom metaphor abstracts

from the ways that society shapes the development of its members in favor of "taking individuals as they are." Reflecting this canon, most economists have not asked how we come to want and value the things we do.

Hobbes' fiction neatly elides the influence of social arrangements on the process of human development and thus greatly simplifies the task of economic theory. But the scope of economic inquiry is thereby truncated in ways which restrict its explanatory power, policy relevance, and ethical coherence. If preferences are affected by the policies or institutional arrangements we study, we can neither accurately predict nor coherently evaluate the likely consequences of new policies or institutions without taking account of preference endogeneity. In the pages which

follow I review models and evidence concerning the impact of economic institutions on preferences, broadly construed, and comment on some implications for economic theory and policy analysis.¹

The production and distribution of goods and services in any society is organized by a set of rules, among which are allocation by fiat in states, firms, and other organizations, patriarchal and other customary allocations based on gender, age, and kinship (as for example takes place within families), gift, theft, bargaining, and of course markets. Particular combinations of these rules give entire societies modifiers such as “capitalist,” “traditional,” “communist,” “patriarchal,” and “corporatist.” These distinct allocation rules along with other institutions dictate what one must do or be to acquire one’s livelihood. In so doing they impose characteristic patterns of interaction on the people who make up a society, affecting who meets whom, on what terms, to perform which tasks, and with what expectation of rewards.

One risks banality, not controversy, in suggesting that these allocation rules therefore influence the process of human development, affecting personality, habits, tastes, identities, and values. One cannot be too far out on a limb when in the company of Adam Smith as well as Edmund Burke, Alexis de Tocqueville and Karl Marx, John Stuart Mill and Frederick Hayek: all celebrated or lamented the effects of mar-

kets and other economic institutions on human development.² But consensus eludes any of the grand claims made concerning the nature of the effects or how they might be generated. The reason is that most writers have implicitly invoked a kind of functionalist correspondence between economic structures on the one hand and values, customs, and tastes on the other, without explaining the mechanisms by which the former might affect the latter. Thoughtful works on the subject—Joseph Schumpeter (1950) on “the civilization of capitalism,” Daniel Bell (1976) on “the cultural contradictions of capitalism,” David Potter (1954) on the “people of plenty,” Karl Polanyi (1957) on “the great transformation,” or Peter Laslett (1965) on “the world we have lost”—are surprisingly bereft of causal arguments.

Nonetheless, the argument that economic institutions influence motivations and values is plausible, and the amount of evidence consistent with the hypothesis is impressive. Many ethnographic and historical studies, for example, recount the impact of modern economic institutions on traditional or indigenous cultures.³ The rapid rise of feminist values, the reduction in family size, and the transformation of sexual practices coincident with the extension of women’s labor force participation likewise suggest that changes in economic organization may foster dramatic changes in value orientations.

Drawing on literatures from the other

¹ I abstract from other forms of preference endogeneity such as the many variants of Harvey Leibenstein’s (1950) “bandwagon” and “snob” effects or James Duesenberry’s (1949) analysis of keeping up with the Jones’ or Thorstein Veblen’s (1934) emulation effects, or the interdependent preferences studied by Robert Pollak (1976). Rather, I here develop the research agenda suggested by Herbert Gintis’ early (1971, 1972) investigations of the impact of economic institutions on preferences.

² In these pages and elsewhere, Albert Hirschman (1977, 1982) has catalogued early statements of the cultural effects of markets, obviating the need for more than passing mention here.

³ Among the more instructive not mentioned elsewhere in this essay are Kenelm Burridge (1969), Daniel Lerner (1958), Margaret J. Field (1960), T. Scarlett Epstein (1962), Michael Tausig (1980), and Jean Enslinger (1992).

social sciences, history, and experimental economics, I have identified five effects of markets and other economic institutions on preferences. Few are supported by empirical evidence that will convince a confirmed skeptic, but most are plausible and consistent with substantial evidence.

Framing and situation construal: economic institutions are situations in the social psychological sense and thus have framing and other situation construal effects; people make different choices depending on whether the identical feasible set they face is generated by a market-like process or not (I address these issues in Section 4).

Intrinsic and extrinsic motivations: the ample scope of market choices and often extrinsic nature of market rewards may induce preference changes driven by individual desires for feelings of competence and self-determination; other institutions may have related effects (Section 5).

Effects on the evolution of norms: economic institutions influence the structure of social interactions and thus affect the evolution of norms by altering the returns to relationship-specific investments such as reputation-building, affecting the kinds of sanctions that may be applied in interactions, and changing the likelihood of interaction for different types of people (Section 6).

Task performance effects: economic institutions structure the tasks people face and hence influence not only their capacities but their values and psychological functioning as well (Section 7).

Effects on the process of cultural transmission: in part for the above reasons, and in part independently, markets and other institutions affect the cultural learning process itself, altering the ways we acquire our values

and desires, including child rearing and schooling, as well as informal learning rules such as conformism (Section 8).

Until recently, economic theory gave little guidance in understanding these effects, for it purposefully abstracted from what were considered to be the irrelevant sociological details of the exchange process. In the complete contracting world of Walrasian economics, for example, there is little reason for an economic actor to be concerned about his exchange partner's psychological makeup or moral commitments; moreover there is no way that these personal traits could be affected, if one were so concerned. Markets of this type, wrote Albert Hirschman in these pages (1982, p. 1473), are peopled by "large numbers of price taking anonymous buyers and sellers supplied with perfect information" . . . and "function without any prolonged human or social contact among or between the parties." Grocery markets approximate this ideal (a fact which may explain why fruit stands and fish markets figure so prominently in economics textbooks).

By contrast, now-standard microeconomic theories of labor, credit, and other markets as well as the contemporary theory of the firm treat economic interactions as personal, strategic, and durable connections among people whose identities matter for the outcomes. Aspects of social life once thought to be the province of psychology or sociology are thus seen to be essential to the explanation of the bread and butter of economics: prices and quantities. The theory of asymmetric information and incomplete contracting shows that markets may not clear in competitive equilibrium, leading to asymmetries between those on the short side of the market (able to secure all the transactions they desire) and those

on the long side of the market, some of which may be unable to secure any transaction at all. An important consequence is the reappearance of complex, asymmetrically placed, opportunistic, and (especially) malleable economic actors more reminiscent of the flesh and blood *dramatis personae* of classical economics than the anemic and one-dimensional *homo economicus* of the standard textbooks.

Two aspects of exchanges with incomplete contracts account for this. First, where contracts are incompletely specified or costly to enforce, the *ex post* terms of an exchange may depend on the normative commitments and psychological makeup of the parties to the exchange; where the amount of work done on the job cannot be secured by a contract it will be influenced by the employee's work ethic or sense of alienation, for example.

Second, because of the durability of the exchange, one or both parties may have the capacity to structure the relationship so as to affect the preferences of their exchange partner (Bowles and Gintis 1993; Mulligan 1997). Paternalistic policies in lifetime employment firms are an example. Incomplete contracts thus provide both the motivation and the means for deliberate (as well as unwitting) preference modification in the exchange process.

Models of incomplete contracts not only dramatize the shortcomings of the exogenous preferences assumption, they also provide a basis for a more nuanced treatment of the effects of markets and other economic institutions on preferences. Walrasian grocery markets support personal interactions quite distinct from the long term relationship characteristic of a lifelong employment firm; and the differences in the structure of these exchanges appear to have effects on preferences, as we will see presently.

Or, to take another example, there are significant differences in the personality effects on participants in markets which clear in equilibrium and those which do not, and in those markets which do not clear, for people on the short side of the market (whose advantageous positions may allow them to make take it or leave it offers) and those on the long side of the market, some of whom are simply excluded from the exchange process, while others fear losing the transaction they have secured. Thus the details of market structures—and in particular the ways in which social interactions are patterned—may be important.

I turn first to methodological issues. In the next section I ask what we mean by preferences and how they might be influenced by economic institutions; and in Section 3 I present a model illuminating the influence of economic institutions on the process of cultural evolution.

2. *Social Interactions and the Evolution of Preferences*

I do not know the fruit salesman personally; and I have no particular interest in his well-being. He reciprocates this attitude. I do not know, and I have no need to know whether he is in direst poverty, extremely wealthy, or somewhere in between . . . Yet the two of us are able to . . . transact exchanges efficiently because both parties agree on the property rights relevant to them.

James Buchanan (1975, p. 17)

Preferences are reasons for behavior, that is, attributes of individuals that (along with their beliefs and capacities) account for the actions they take in a given situation. To explain why a person chose a point in a budget set, for example, one might make reference to her craving for the chosen goods, or to a religious prohibition against the excluded goods. Conceived this way, preferences

go considerably beyond tastes, as an adequate account of individual actions would have to include values or what Amartya Sen (1977) terms commitments and John Harsanyi (1982) calls moral preferences (as distinct from personal preferences). Also included are the manner in which the individual construes the situation in which the choice is to be made (Lee Ross and Nisbett 1991), the way that the decision situation is framed (Amos Tversky and Kahneman 1986), compulsions, addictions, habits, and more broadly, psychological dispositions. Preferences may be strongly cognitively mediated—my enjoying ice cream may depend critically on my belief that ice cream does not make me fat—or they may be visceral reactions—like disgust or fear—evoking strong emotions but having only the most minimal cognitive aspects (Robert B. Zajonc 1980; David Laibson 1996; Loewenstein 1997; Rozin and Carol Nemeroff 1990). The term “preferences” for these heterogeneous reasons for behavior is perhaps too narrow, and runs the risk of falsely suggesting that a single model of action is sufficient; Patrick H. Nowell-Smith’s (1984) “pro and con attitudes” or “reasons for choosing” are more descriptive, but unwieldy.⁴

For preferences to have explanatory

⁴ In order to account for an individual’s actions preferences need not coincide with the reasons given by the particular individual, of course. Nor do preferences alone generally give a sufficient account of behaviors: my consumption of aspirin is accounted for by my aversion to pain plus my belief that aspirin will relieve the pain and that this little white object is indeed an aspirin, and so on.

⁵ Benjamin Bloom (1964) documents stability over time of a range of measured personality traits. For particular psychological dimensions introduced below see Herman Witkin and John Berry (1975 p. 41; field independence), Paul Andrisani and Gilbert Nestel (1976 p. 161; internal-external locus of control), and Kohn and Carmi Schooler (1983 p. 147; self-directedness). Ross and Nisbett (1991) provide a critical review of the

power they must be sufficiently persistent to explain behaviors over time and across situations.⁵ If preferences are endogenous with respect to economic institutions it will be important to distinguish between the effects of the incentives and constraints of an institutional setup (along with given preferences) on behaviors, and the effect of the institution on preferences *per se*. The key distinction is that where preferences (and not just behaviors) are endogenous they will have explanatory power in situations distinct from the institutional environments which account for their adoption. Thus, however acquired, preferences must be internalized, taking on the status of general motives or constraints on behavior. Values which become durable attributes of individuals—for example, the sense of one’s own efficacy introduced below—may explain behaviors in novel situations, and hence are included in this broad concept of preferences.

We acquire preferences through genetic inheritance and learning. Very long lasting economic institutions, such as the social structures of the simple societies which predominated in the first 100,000 years (90 percent) of biologically modern human existence, could substantially affect gene distributions in a population and hence could provide part of a genetic explanation of preferences (Christopher Boehm 1993; Linnda Caporael et al. 1989; Feldman and Kevin Laland 1996; William Durham 1991). Nonetheless it seems likely that the more important effects of economic organization on preferences operate through cultural transmission, that is, learning. Drawing on the extensive literature on food tastes, Clark

evidence for intertemporal and cross situational consistency of behavior.

McCauley, Rozin, and Barry Schwartz (1994, p. 27) write:

The human being comes into the world with certain likes and dislikes, such as innate dislike of pain, bitter tastes, and many types of strong stimulation, and an innate liking for certain types of touch or sweet tastes . . . Almost the entire adult ensemble of likes and dislikes is acquired, presumably in the process of enculturation.

For this reason I will treat preferences as cultural traits, or learned influences on behavior: liking ice cream, or never lying, or reciprocating dinner invitations are cultural traits.⁶

We know surprisingly little about how we come to have the preferences we do; the theory of cultural evolution is thus similar to the theory of natural selection prior to its integration with Mendelian genetics. While it is comforting to recall that Darwin's contribution was possible even though he did not know how traits are passed on, this lacuna is nonetheless a major impediment to endogenizing preferences. We know that intentional motivations are sometimes involved; one learns to appreciate classical music because one notices that aficionados appear to enjoy it (Gintis 1972; Bowles and Gintis 1986; Gary Becker 1996). But instrumental motivations may be of limited importance compared to other influences such as mere exposure (Zajonc 1968), the unintended consequences of activities motivated by other ends (such as migration to a different

culture in search of work), and conformism (Solomon Asch 1952; Muzafer Sherif 1937; Theodore Newcomb et al 1967). While the individual benefits accruing to those exhibiting particular cultural traits may affect these learning processes and hence the rate at which the traits are replicated, most preferences are not chosen in the usual sense of intentional action toward given ends. Rather, preferences are learned as an accent or a taste for a national cuisine is acquired, that is, by processes which may but need not be intentional.

However acquired, preferences are internalized: there is considerable evidence that preferences learned under one set of circumstances become generalized reasons for behavior. Thus economic institutions may induce specific behaviors—self-regarding, opportunistic, or cooperative, say—which then become part of the behavioral repertoire of the individual. The effects of mere exposure just mentioned provide a particularly transparent example: “likes” or habits initially induced by exposure or repetition become permanent reasons for behavior.

Learning by doing is another mechanism for the generalization of preferences: behaviors found successful in coping with the tasks defined by one sphere of life are generalized to other realms of life. Paul Breer and Edwin Locke (1965, p. 253) present substantial experimental evidence to this effect. They asked subjects to perform different sets of tasks and investigated changes in apparently unrelated values:

In a period of less than four hours and without a single verbal reference to family, fraternity, way of life, or any of the other areas measured, we succeeded in changing a wide variety of attitudes ranging from specific beliefs about the most effective way to organize a work group, to abstract values concerning

⁶The pioneering works in the formal theory of cultural evolution are Luigi Cavalli-Sforza and Feldman (1981) and Boyd and Peter Richerson (1985). Robert LeVine (1973) earlier developed what he termed a Darwinian “variation-selection model to culture-personality relations.” Sarah Otto, Freddy Christiansen, and Feldman (1995), Robert Plomin and his collaborators (see Plomin and Denise Daniels 1987) as well as Rozin (1991). Rozin and T. A. Vollmecke (1986) provide evidence that food tastes, psychological functioning, and other traits are far from exhaustively determined by genetic inheritance.

the individual and society. This evidence was taken to mean that task experience is capable of exerting a very powerful influence on all sorts of beliefs, values, and preferences which, to the casual observer, appear to be only remotely related to the task itself.

Finally, preferences may become generalized through a process which Leon Festinger (1957, p. 260) termed dissonance reduction:

the human organism tries to establish internal harmony, consistency or congruity among his opinions, attitudes, knowledge, and values. . . . there is a drive toward consonance among cognitions.

The cognitive elements in dissonance could be one's values and a behavior, as when one is doing something which is inconsistent with one's values. Festinger (1957, pp. 271–73) frequently used this reasoning to explain “specific ideological changes or opinion changes subsequent to the change in a person's way of life” such as a:

sudden change in the job which a person does. A worker in a factory, for example may be promoted to the job of foreman. Suddenly he finds himself giving orders instead of receiving them . . . these new actions will be dissonant in many instances with opinions and values which he acquired as a worker and still holds. In pursuit of dissonance reduction, one would expect this person to quite rapidly accept the opinions and values of other foreman, that is, opinions and values which are consonant with the things he now does.

Dissonance reduction thus provides another explanation for how economic circumstances may induce new preferences, and why the new preferences might become general reasons for behavior.

In contrast to the social interactions based approach taken here, many would emphasize the role of religious or political indoctrination or advertising in preference change. These intentional forms of inculcation are undoubtedly impor-

tant, but where empirical studies are available, other influences appear as powerful if not more.⁷ If I am right that acquiring preferences is akin to acquiring an accent, studies of language change may be illuminating. On the basis of intensive empirical study of linguistic change in Philadelphia, for example, William Labov concluded that

linguistic traits are not transmitted across group boundaries simply by exposure in the mass media or in schools. . . . Our basic language system is not acquired from school teachers or from radio announcers, but from friends and competitors: those who we admire, and those who we have to be good enough to beat. (Labov 1983, p. 23)

The inference is not that institutions such as schools and churches are unimportant, but that understanding their role in the acquisition of cultural traits may be enhanced by seeing them—along with markets, firms, families, and governments—as distinct patterns of social interaction affecting the diffusion of cultural traits in a population in ways often unrecognized by any of the participants.

3. Economic Institutions and Cultural Evolution

[The 17th century Salem “witches” and their defenders were] a group of people who were on the advancing edge of profound historical change. If from one angle they were diverging from an accepted norm of behavior, from

⁷ Studies of preferences for brands of food, soap, movies, and other consumption items for which one would expect an important advertising effect indicate that personal contact is considerably more important than advertising in motivating brand changes (Elihu Katz and Paul Lazarsfeld 1955.) Everett Rogers' (1962) classic study of diffusion of innovations found personal communication to be of substantial importance in the diffusion of both ideas and practices such as cooking methods. Some behavioral changes may be induced simply by providing information; in these cases media exposure appears to be effective. But where information alone is insufficient (changes in smoking behavior, e.g.) face to face contact appears to be more effective (June Flora, Nathan Maccoby, and John Farquhar 1989).

another angle their values represented the “norm” of the future. In an age about to pass, the assertion of *private will* posed the direst possible threat to the stability of the community; in the age about to arrive it would form a central pillar on which that stability rested.

Paul Boyer and Stephen Nissenbaum
(1974, p. 109)

How might allocation rules affect the differential replication of cultural traits? The gist of an answer is given best by a concrete example. Erich Fromm and Michael Maccoby’s (1970, p. 232) study of social character in a Mexican village led them to this conclusion:

In a relatively stable society (or class) with its typical social character there will always be deviant characters who are unsuccessful or even misfits under the traditional conditions. However in the process of socioeconomic change, new economic trends develop for which the traditional character is not well adapted, while a certain heretofore deviant character type can make optimal use of the new conditions. As a result the “ex deviants” become the most successful individuals or leaders of their society or class. They acquire the power to change laws, educational systems, and institutions in a way that . . . influences the character development of succeeding generations. . . . deviant and secondary trait personalities never fully disappear and hence . . . social changes always find the individuals and groups that can serve as the core for the new social order.

The traits of the “ex deviants” in this example enjoy heightened replication propensities both directly (others may want to emulate the successful) and indirectly, because bearers of the traits become privileged cultural models, such as teachers.

The Fromm-Maccoby view is supported by the field research of LeVine in Nigeria. Using David McClelland’s (1961) measures of achievement motivation and other value orientations, LeVine (1966) found significant differences among distinct cultural groups

which were not explicable by religious or educational influences. However, the pattern of personality differences were consistent with the hypothesis that distinct motivations had evolved as adaptations to longstanding geographically determined differences in structures of competitive economic opportunity among the various cultural groups. Moreover as market-based and other competitive systems of advancement became more generalized during the course of the twentieth century, those exhibiting high levels of achievement orientation—some of them presumably “deviants” in the premodern compliance-based rather than achievement-oriented subcultures—gained positions of educational leadership, thus assuming roles as privileged cultural models.

These studies of Mexico and Nigeria suggest that new economic arrangements might affect cultural evolution in two ways: either by influencing the economic well-being of those exhibiting distinct traits or by altering the learning rules which make up the process of cultural transmission itself. The cultural transmission process translates economic well-being, exposure to role models, and other influences into replication of traits, and thus intervenes between payoffs and replication.

Evolutionary game theoretic models typically abstract entirely from the process of cultural transmission, representing payoffs associated with particular traits as if they were the only influences on the replication of traits.⁸ By contrast, models of cultural evolution typically address what is known about the particulars of the process by

⁸ One could interpret the payoffs in evolutionary game theoretic models as the replication propensities themselves, but while thus formally accommodating analysis of the process of cultural transmission, this would add no insight to the distinct influences of the transmission process per se.

which traits are acquired, distinguishing between vertical transmission from parents, oblique transmission from non-parental members of the previous generation (for example, teachers), and horizontal transmission from one's own cohort (as in the case of language change or fashion; Penelope Eckert 1988, 1982; Labov 1972, p. 304).⁹ These models, as well as the studies of Mexico and Nigeria above, make it clear that a trait which is advantaged in the transmission process may diffuse in a population even if the economic benefits associated with the trait are inferior to the population average. Thus the effects of economic institutions on both payoffs to distinct traits and the cultural transmission process must be studied.

A particularly important example of how a trait may be advantaged in the transmission process is termed conformist transmission: the prevalence of a trait in a population may enhance the replication propensity of each representative of that trait, independently of the payoff to those exhibiting the trait. Under quite general conditions where learning is costly, conformist transmission may be efficient in the sense that an individual who sometimes adopts traits by simply copying what others are doing rather than on the basis of the payoffs associated with various actions will do better than those who always engage in costly investigation of the relevant payoffs (Boyd and Richerson 1985; Feldman, Kenichi Aoki, and Jochen Kumm 1996). Conformist transmission of preferences thus might have evolved under the influence of either genetic or

cultural inheritance. Frequency dependent replication may also arise where groups that are numerically preponderant are disproportionately likely to occupy privileged roles as teachers or other cultural models. Persistent ethnic differences in food tastes, coupled with very low vertical (parental) transmission of these tastes (Rozin 1991) is a piece of evidence suggesting the importance of conformist transmission. Another, from empirical cross cultural psychological studies, is the importance of membership in particular tribes as a predictor of values orientations, independently of sources of livelihood, ecology, and other possible influences (Robert Edgerton 1971).

The relationship between payoff-based and conformism or other frequency dependent influences on the replication of cultural traits and the ways that these may be influenced by economic institutions may be illustrated by means of a simple model based on Bowles (1996). The basic intuition is that the distribution of cultural traits in a population is determined as the equilibrium of a system whose exogenous elements are subject to long-term influence of markets and other economic institutions. Economic institutions affect the evolution of preferences by changing these exogenous determinants of the cultural equilibrium.

Suppose x and y are mutually exclusive cultural traits. Each member of a large population is a "cultural model" with replication propensities, r_x or r_y , defined as the number of copies of each model made at end of each period, possibly a generation. Agents implement the strategy dictated by their trait in a game which assigns benefits to each, following which the traits are replicated through an updating process described below, generating a new population frequency (one may think of the popula-

⁹ Empirical studies in this tradition include Kuang-Ho Chen, Cavalli-Sforza, and Feldman (1982) and Cavalli-Sforza et al. (1982); Boyd and Richerson (1985) survey many empirical studies of these three transmission processes. Alberto Bisin and Thierry Verdier (1996) present a model of preference evolution integrating the cultural evolution and evolutionary game theory approaches.

tion as composed of single parents each with a single child, who in the process of growing up may or may not adopt the traits of the parent). *Cultural equilibrium* is defined as a frequency of traits which is stationary.

Members of the population are paired to play a two-person game, the payoffs of which are denoted $\pi(i,j)$, the payoff to playing trait i against a j -playing partner. The “game” may be one of the familiar interactions of the hawk-dove, prisoners’ dilemma, or coordination game type. It might refer to an interaction as everyday as eating a meal together, or meeting in public, where the two traits might dictate matters of style (“wearing a tie”) or taste (“wanting a drink”). Or it could refer to an exchange of goods or some more conventionally economic interaction. The payoff structure could be degenerate in the sense that my enjoyment of a beer may not depend at all on what you are eating or drinking; but the model is designed to address more interesting cases of emulation, social dilemmas and the like.

For any population frequency of the x trait, $p \in [0,1]$ let $\mu_{ij} = \mu_{ij}(p;\delta)$ be the probability of being paired with a j type conditional on being an i type, where $\delta \in [0,1]$ is a measure of the exogenously determined extent to which pairing is nonrandom.¹⁰ If pairing is random $\delta = 0$ and the probability of meeting an x type is simply p , irrespective of one’s own type: $\mu_x = \mu_{yx} = p$. But where residence is correlated with type, or where sorting by type takes place by means of social networks or other groups, the probability of meeting one’s own type may exceed that given

¹⁰ The explicit relationship between the μ ’s and p is this: define δ as the degree of segmentation of the population, then for $p \in (0,1)$, $\mu_{xx} = \delta + (1-\delta)p$ and $\mu_{xy} = (1-\delta)(1-p)$, from which it is clear that δ is a non-genetic analogue to the “degree of relatedness” in biological models (W. D. Hamilton 1975; Alan Grafen 1979).

by the population frequency. The expected payoffs are thus

$$\begin{aligned} b_x(p;\delta) &= \mu_{xx}\pi(x,x) + \mu_{xy}\pi(x,y) \\ b_y(p;\delta) &= \mu_{yx}\pi(y,x) + \mu_{yy}\pi(y,y). \end{aligned} \quad (1)$$

To take account of frequency dependent biases in cultural transmission suppose that conformist transmission is described by the conformist bias function $\sigma(p)$, which we write as $\sigma_x(p-k)$ and $\sigma_y(k-p)$ where for simplicity $\sigma_y = \sigma_x \equiv \sigma > 0$ and $k \in [0,1]$ is the value of p for which no bias operates. Further we define $\alpha \in [0,1]$, the degree of conformism, as the weight placed on $\sigma(p)$ as opposed to $b(p;\delta)$ in the transmission process. Thus we have the replication propensities:

$$\begin{aligned} r_x &= \alpha\sigma(p-k) \\ &+ (1-\alpha)(b_x(p;\delta) - b_y(p;\delta)) + 1 \end{aligned} \quad (2)$$

$$\begin{aligned} r_y &= \alpha\sigma(k-p) \\ &+ (1-\alpha)(b_y(p;\delta) - b_x(p;\delta)) + 1. \end{aligned}$$

Where $p = k$, or if $\alpha = 0$ conformist transmission does not operate so replication depends solely on payoffs, as in conventional evolutionary game theoretic models. Equilibrium is defined by $dp/dt = 0$, which for $p \in (0,1)$ requires that the effects of conformist transmission offset the effects of unequal game outcomes so that $r_x = r_y$, or

$$\alpha\sigma(p-k)/(1-\alpha) = b_y(p;\delta) - b_x(p;\delta) \quad (3)$$

from which it can be seen that cultural equilibrium does not require equal payoffs. Figure 1 illustrates this equilibrium condition for the case of an interior stable equilibrium. This equilibrium can be seen to be stable because for $p > p^*$ the payoff advantage of the y trait (the right-hand side of (3)) more than offsets its disadvantage due to conformist transmission (the lefthand side), as a result of which $r_y > r_x$ giving $dp/dt < 0$. So disturbances of p will be self correcting.

Markets and other economic institu-

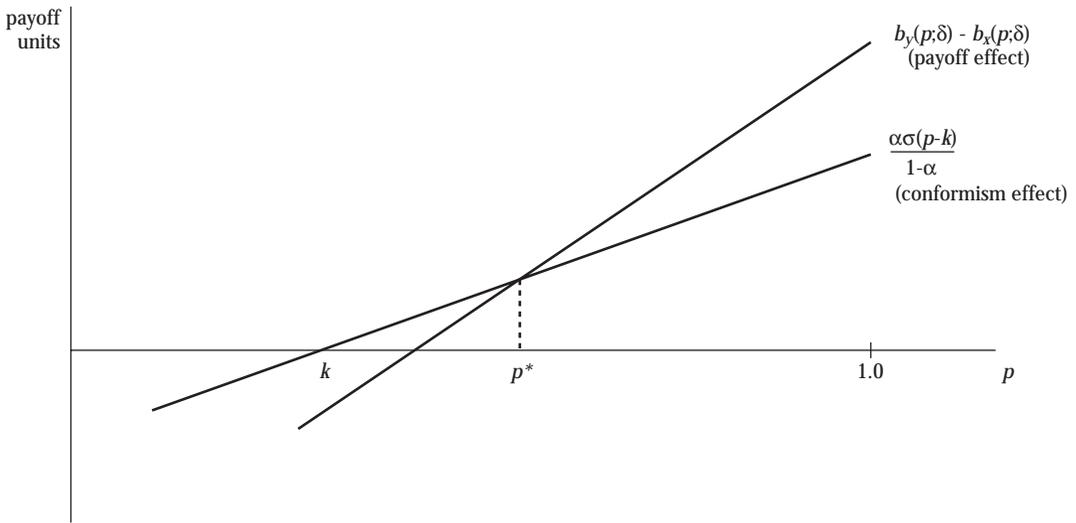


Figure 1. Cultural Equilibrium

tions will affect the distribution of cultural traits in the population because they influence the determination of the exogenous variables in the above model:

- i) the rules governing who interacts with whom (as indicated by the functions $\mu_{ij}(p, \delta)$ measuring the degree of segmentation into distinct social networks and other sources of nonrandom pairing);
- ii) the payoffs $\pi(i, j)$ to any given interaction (determined by the frequency of interaction, ease of recognition of types, for example);
- iii) the structure of the transmission process itself (in this case the nature and strength of conformism, σ , k , and α , including the assignment of some types as compulsory or otherwise advantaged models, such as teachers).

In more complex models, allowing for movement among population groups, cultural equilibria are influenced by migratory flows, which in turn are subject to the influence of economic institutions (Bowles and Gintis 1998).

To say that economic institutions have these effects is, of course, to compare markets, say, with some other allocation rule or to compare various types of markets. Allocation rules are differing mechanisms for coordinating the transfer of goods and services. Economists tend to focus on the relationships thereby established among the objects of exchange, relative prices, for example. But allocation rules also establish relationships among people, based on assignment to distinct positions with corresponding rights, status and obligations and patterns of interaction. Thus markets support interpersonal experiences distinct from other allocation rules. Robert Lane (1991), whose *The Market Experience* must be the starting point for any consideration of the psychology of markets, writes:

In spite of the variety of markets over time and across cultures, I believe that it is possible to conceive of a *market experience* that is typical, frequent, and paradigmatic for those who do market work for pay, use money and buy—rather than make, inherit or receive from government—the commodities with

which they adorn their lives. (p. 4). . . Inevitably the market shapes how humans flourish, the development of their existences, their minds, and their dignity. (p. 17)

What is psychologically distinctive about markets as opposed to other allocation mechanisms? Max Weber ([1922]1978, p. 636) wrote “A market may be said to exist wherever there is competition for opportunities of exchange among a plurality of potential parties.”¹¹ Markets structure social interactions “each of which is specifically ephemeral insofar as it ceases to exist with the act of exchanging the goods.” As a result, according to Weber,

The market community as such is the most impersonal relationship of practical life into which humans can enter with one another. This is not due to the potentiality of struggle among the interested parties which is inherent in the market relationship. . . . The reason for the impersonality of the market is its matter-of-factness, its orientation to the commodity and only to that.

In Weber’s view, then, markets—at least ideally—are characterized by impersonality, ephemerality of contact, and ease of entry and exit.¹² This might be termed the economics textbook conception of competitive markets.

Contrast these arrangements with

¹¹ Georg Simmel (1900, p. 297) writes in similar vein that “money . . . is conducive to the removal of the personal element from human relationships through its indifferent and objective nature.” Talcott Parsons (1949, p. 688) describes markets similarly: “When a man walks into a store in a strange city to make a purchase, his only relevant relation to the clerk behind the counter concerns matters of kind of good, price, etc. All other facts about both persons may be disregarded. Above all it is not necessary even to know whether the two have any further interests in common beyond the immediate transaction.”

¹² On the psychological dimensions of distinct economic arrangements, see Alan Page Fiske (1991, 1992). Among economists, Yoram Ben-Porath (1980, p. 4) provides the fullest description of the idealized interactions among market agents as “impersonal.” See also Zelizer (1996).

	Anonymous	Personal
Ephemeral	Ideal Markets	Ascriptive Markets
Durable	Bureaucracies	Communities

Figure 2. Allocation Rules as Learning Environments

what Parsons (1967, p. 507) calls the “two principal competitors” of the market: “requisitioning through the direct application of political power” and “non-political solidarities and communities.” These allocation rules contrast with markets in at least one of the characteristics—impersonality and ephemerality—stressed by Weber. Centralized bureaucratic allocations are in some respects as impersonal as markets—at least ideally—but membership in the group defining the allocation is generally given, entry and exit costs are high (often involving a change in citizenship or at least residence), and contacts are far from ephemeral. In contrast to both bureaucratic and market allocation, kin-like directly interacting communities with stable membership exhibit neither ephemerality nor impersonality in their characteristic rules governing allocation.¹³ Figure 2 presents these three ideal types along with a fourth—ephemeral and personal social interaction—which I have termed ascriptively ordered markets. Racially segmented spot labor markets are an example, as they are personal (the racial identities of the participants matter) but the contact among participants is not ongoing.

The contrast between personalized non-market transactions and the putative impersonality of market exchange

¹³ I have in mind allocation systems of the type described by Emile Durkheim’s “organic solidarity” ([1933]1964), or Sahlins’ (1972) “generalized reciprocity,” or Ferdinand Tönnies’ ([1887]1963) *Gemeinschaft*, or William Ouchi’s “clans” (1980).

is, of course, a matter of degree, particularly in markets characterized by the asymmetric information, incomplete contracts and hence importance of trust, ongoing interaction, and shared understandings of the type analyzed by the theory of social exchange.¹⁴ Impersonality of contact and permeability of boundaries, while characteristic of all markets by comparison to other allocation rules, describe some markets more aptly than others. Thus in assessing the cultural effects of markets it will be necessary to distinguish not only between markets and other allocation rules such as bureaucracy and community, but among differing types of markets as well.

I turn now to evidence and reasoning concerning the five effects of economic institutions on preferences previewed in the introduction.

4. *Markets, Situations, and Framing*

Money is one of the shatteringly simplifying ideas of all time, and like any other new and compelling idea, it creates its own revolution. . . . [The] Tiv [of Nigeria] have tried to categorize money with other imported goods . . . to be ranked morally below subsistence. They have, of course, not been successful in so doing.

Paul Bohannon (1959, pp. 500, 503)

Markets frame choices; we will see that a choice problem presented in a market environment may induce behaviors different from the identical problem in framed in a non-market way. Consider an example of market framing: paying a tax and receiving a governmental service differs relevantly from buying the identical service on a market. In the first case one may—as a citizen—

feel entitled to the service (irrespective of the taxes paid) and may be unlikely to compare the value of the service to that of other goods and services whether traded or not; in the second case one may feel that the good is acquired by dint of one's talents as an income earner, and may readily compare its price with other traded goods and services, the value of one's own labor time, and the like. This framing effect may thus be part of an account of why a particular action was taken; if different institutions induce different choices from an identical choice set institutions may affect preferences. This is because choices made under the influence of institutionally determined framing may later be repeated even in the absence of the framing effect if the effects of exposure to the object of choice, or dissonance reduction effects are strong; however, I am aware of no evidence to this effect.

Markets thus affect behavior in ways not fully captured by the fact that market-determined prices and endowments define the budget set: markets provide presumptive reasons why people possess the goods they do, and they prompt some comparisons while inhibiting others. I call these the construal effects of markets, borrowing the term from social psychology in preference to the familiar but narrower concept of framing effects. The construal effects of markets arise in large part because people appear to have what might be termed relational preferences: the terms on which they are willing to transact depends both on the perceived relationships among the exchanging parties, and on related concepts of fairness. Markets affect both.

There is considerable experimental evidence consistent with the importance of the construal effects of markets. Experimental markets and bar-

¹⁴ Kenneth Arrow (1971), George Akerlof (1984), Heinz Hollander (1990), Rachel Kranton (1996), Kreps (1990), have recently formalized some of Peter Blau's (1964) and George Homans' (1958) early reasoning concerning social exchange.

gaining environments consistently yield discrepant results, with markets quickly converging to the competitive equilibria implied by self-regarding preferences, and bargaining games often yielding evidence consistent with other-regarding or relational preferences.¹⁵ An example of the later is the comparative study of bargaining and market behavior in four cultures by Alvin Roth et al. (1991). In their study both market and bargaining experiments were designed to have distributionally extreme equilibria, one player receiving all of the benefits. The market experiments quickly converged to this equilibrium in all four cultures. By contrast, proposers in the ultimatum game (the bargaining situation) made much higher than equilibrium offers; and substantial positive offers were frequently rejected.¹⁶ Positive offers are also common in dictator games. These results are consistent with a large body of experimental evidence by others, beginning with Werner Güth, Rolf Schmittenger, and Bernd Schwarze (1982).

A considerable body of research has sought to explain this now well established aspect of ultimatum and dictator game play, with interest centering on the question (unrelated to my concern here) of whether the unexpected results were motivated by intrinsically generous preferences on the part of the proposers. But the subsequent experi-

ments, particularly those by Elizabeth Hoffman et al. (1994), have yielded considerable insight on the construal effects of markets. Hoffman and her collaborators varied two aspects of the experimental environment for ultimatum and dictator games: proposers either won their position by doing well on a trivia quiz or were randomly assigned, and their relationship to their game partner was described either as an “exchange” (with prices elicited by the experimenter) or simply as “divide \$10.” The combined “earned status” plus “exchange” experimental condition approximates a market arrangement in that competitive success is not simply a matter of chance but is based on apparent accomplishment; and the exchange framing of the game structure is transparently more market-like than the “dividing the pie” framework.¹⁷ Despite the fact that the experimental situation was otherwise identical, the two market like protocols yielded significantly smaller offers in both the ultimatum game and the dictator game.

In other experiments, market-like anonymity generates behaviors differing from those induced by more personal settings. Communication or other conditions contributing to group identity or a reduction in social distance among experimental subjects increases contributions in public goods games (John Ledyard 1995; Robyn Dawes, Alphon-

¹⁵Camerer and Richard Thaler (1995) is a recent survey of results for ultimatum and dictator experiments. Alternating offer bargaining experiments yield similar results (Jack Ochs and Roth 1989).

¹⁶A high offer in an ultimatum game may not indicate generosity toward the other player, but rather the anticipation that low offers will be rejected. But the rejection of a positive offer is other regarding (perhaps motivated by spite or a commitment to reciprocal fairness) so I represent high offers by the proposer as evidence of other regarding behavior (either that of the proposer or the proposer's anticipation of the responder).

¹⁷If, as I have suggested, markets enhance the perception that one's possessions are acquired by merit rather than by chance, the extent of endowment effects—the unwillingness to part with goods in one's possession for prices considerably higher than the maximum price one would have paid to acquire them—may be subject to market effects. Experimental subjects reported by Loewenstein and Samuel Issacharoff (1994) were particularly unwilling to part with objects in their possession if they came to possess them as a result of winning an inconsequential contest. Thus market-acquired goods may be more subject to endowment effects than goods acquired as gifts or public transfers.

van de Kragt, and John Orbell 1988) and induces cooperative play in prisoners' dilemma interactions (Peter Kollock 1997). Simon Gaechter and Fehr (1997) find that in a public goods interaction, even quite minimal (experimentally induced) social familiarity among subjects enhances the impact of social approval incentives (implemented by ex post revelation of subjects' identities and contributions); when familiarity and the public revelation of one's contributions is combined, a significant increase in participation results.

On the basis of experimental evidence from dictator and ultimatum games, Schotter, Avi Weiss, and Inigo Zapater (1996, p. 38) offer this conclusion:

The morality of economic agents embedded in a market context may . . . be quite different from their morality in isolation. While we are not claiming that people change their nature when they function in markets, it may be that the competition inherent in markets and the need to survive offers justifications for actions that in isolation would be unjustifiable.

A striking example illustrating this suggestion is found in Catherine Andre and Platteau's (1997, p. 32) study of the impact of the land market in Rwanda:

customary obligations attached to lineage lands, in particular obligations to redistribute land in favor of landscarce kith and kin, cease to apply when the lands are acquired through a purchase instead of being handed down within the lineage.

The experimental results might be summarized by saying that the more the experimental situation approximates a competitive (and complete contracts) market with many anonymous buyers and sellers, the less other-regarding behavior will be observed.¹⁸ Because the

¹⁸ On the differing outcomes of anonymous and face to face bargaining see Roth (1995) and Roy Radner and Schotter (1989).

above market and non-market experiments were conducted with the same subject pools, these results are consistent with the view that market-like situations induce self-regarding behavior, not by making people intrinsically self-ish, but by evoking the self-regarding behaviors in their preference repertoires. Thus, the hypothesis that market situations induce self-regarding behavior does not imply that those living in non-market societies would be intrinsically less self-regarding.¹⁹

Where competitive markets approximate the law of the single price and where the extent of markets is such that few things do not have a price, markets have further construal effects: they facilitate comparison among disparate objects. The appropriate comparison is to settings (in families or in so-called "primitive exchange") in which goods may be transacted at vastly different exchange ratios depending on the social relationships among the parties to the exchange.²⁰ Reporting on a pre-market society in southeastern New Guinea, Raymond Firth (1958, p. 69) writes: "There is . . . no final measure of the value of individual things, and no common medium whereby every type of good and service can be translated into terms of every other." Well working markets, by contrast, favor thinking of goods both abstractly (bananas in general, not this particular banana) and

¹⁹ In fact high ("other regarding") offers in the ultimatum games of Roth et al. were made in what would appear to be the most and least market-like societies in the sample—U.S. and the former Yugoslavia (by contrast to Israel and Japan). In the public goods experiments by Steven Kachelmeier and Mohamed Shehata (1997) subjects in Beijing acted no different than the Canadian subjects under conditions of anonymity but proved significantly less self regarding when the identity of the players was public knowledge.

²⁰ Sahlins' (1972) theory of primitive exchange is distinct from market exchange precisely in this deviation from the law of the single price.

comparatively (objects seen as representing more or less market value, divorced from their particular uses or properties). Markets are thus powerful cognitive simplifiers, allowing radical reductions in the complexity with which one typically views an assortment of disparate goods.

A dramatic example is provided Bohannan's study (1959) of the extension of markets in an African subsistence economy, that of the Tiv in Nigeria.

The most distinctive feature about the economy of the Tiv—and it is a feature they share with many, perhaps most, of the pre-monetary peoples—is what can be called a multi-centric economy . . . in which a society's exchangeable goods fall into two or more mutually exclusive spheres, each marked by different institutionalization and different moral values. (p. 492)

Among the Tiv, domestic goods, women, and prestige goods were all exchanged, and in the latter there was a monetary equivalent (brass rods) but “no one, save in the depths of extremity, ever paid brass rods for domestic goods” (p. 493), while “rights in women had no equivalent or ‘price’ in brass rods or in any other item save, of course, identical rights in another woman. . . . Exchanges within a category . . . excite no moral judgements. Exchanges between categories, however, do excite a moral reaction” (p. 496). The extension of generalized markets, and with them money, eroded these arrangements:

General purpose money provides a common denominator among all the spheres, thus making the commodities within each expressible in terms of a single standard and hence immediately exchangeable. (p. 500)

Among the Tiv, the set of permissible exchanges has expanded with the advent of markets and basic notions of what it means to have a well-ordered life have changed.

5. *Markets and Motivation*

In the realm of ends everything has either a price or dignity. Whatever has a price can be replaced by something else which is equivalent; whatever is above all price, and therefore has no equivalent, has dignity.

Immanuel Kant ([1785]1949, p. 182)

The reward structures of markets may affect motivation independently of framing effects. The impersonality and ephemerality of contact which characterizes markets (by contrast to other allocation rules) imply that a market “transaction entails a full quid pro quo (with) no left-over business or outstanding balance” (Ben-Porath 1980, p. 4) By default, then, the incentives relevant to activities governed by markets frequently center on the quid pro quo and take the form of what social psychologists term extrinsic rather than intrinsic rewards or sanctions, namely rewards unrelated to the activities being motivated. On the basis of dozens of experiments by social psychologists over the past 30 years one may conclude that the salience of extrinsic reward in market activities will have effects on preferences.

A series of well-designed experiments show that the degree to which an activity is liked may be reduced by inducing subjects to engage in the activity as a means toward an extrinsic goal, such as being paid. The nature of the extrinsic reward is unimportant as long as it is clearly a quid pro quo. Mark Lepper, David Greene, and Nisbett (1973, p. 130) write “Contracting explicitly to engage in an activity for a reward (will) undermine interest in the activity, even when the reward is insubstantial or merely symbolic.” Correspondingly when people are induced to engage in an activity with little or no extrinsic reward, they come to value the activity more highly, that is, they come to be-

lieve that their actions were intrinsically motivated (Lepper and Greene 1978; and Edward Deci and Richard Ryan 1985; Deci 1975).

Similar changes in evaluations induced by extrinsic rewards have been shown to affect subsequent behavior in non-experimental situations. Frey and Felix Oberholzer-Gee (1997) found that proposing financial compensation reduced Swiss citizens' willingness to host a nuclear waste facility. Richard Titmuss' (1971) claim that eliciting blood donations by monetary incentives had perverse effects on preferences lacked compelling evidence, as was pointed out by Arrow (1972) and Christopher Bliss (1972). However a field experiment by William Upton (1974) partially supports Titmuss' suggestion. Among 1,261 prospective blood donors in Kansas City and Denver, some were offered financial inducements, others not. Among those initially exhibiting strong motivations to contribute blood (as indicated by past donations), those offered financial inducements were substantially less likely to actually donate blood than those offered no financial reward. Among those expressing low intrinsic motivation, however, the prospect of financial reward had a (not statistically significant) positive effect on eventual donation.

The underlying psychological mechanism appears to be a fundamental desire for "feelings of competence and self determination" which are associated with intrinsically motivated behaviors (Deci 1975). Relatedly, a person's perceived degree of self-determination in making a choice influences the evaluation of the things over which the choice is being made. For example, risk imposed by others is weighed more negatively than risk chosen by the subject. (See Chauncy Starr 1969; see also

Camerer and Howard Kunreuther 1989.)

While the evidence for extrinsic reward and other self-determination effects on preferences appears quite strong, the relevant data provide little support for the anti-market normative inferences sometimes thought to follow. First, the evidence does not implicate monetary rewards per se, but rather any extrinsic reward (including negative rewards such as punishments or admonitions). Moreover, distinctly non-market aspects of governance—close supervision, externally imposed time limits for work tasks for example—appear to have similar effects (Lepper and Greene 1978, p. 121). Paying someone to perform a task which they might willingly have done without pay seems likely to undermine motivation; but this says little about the relative effectiveness of the various ways—pay, supervision, threat of job loss, etc.—to induce people to undertake tasks which they would rather *not* do. Second, while the extrinsic nature of market rewards may undermine motivations, the wide range of choices often afforded in market situations may support the sense of self-determination and thus induce positive motivational effects.

6. *Markets, Reputations, and Norms*

The real reason why all these economic obligations [among the Trobriand Islanders] are normally kept, and kept very scrupulously, is that failure to comply places a man in an intolerable position . . . The honourable citizen is bound to carry out his duties, though his submission is not due to any instinct or intuitive impulse or mysterious "group sentiment," but to the detailed and elaborate working of a system, in which every act has its own place and must be performed without fail . . . every one is well aware of its existence and in each concrete case he can foresee the consequences.

Bronislaw Malinowski (1926, p. 40)

“Market-like arrangements” wrote Charles Schultze (1977, p. 18) “reduce the need for compassion, patriotism, brotherly love, and cultural solidarity.” Minimizing the demand on what might now be termed social capital, plus the conviction that the market system is, as Hayek (1948, p. 11) wrote “a system under which bad men can do least harm,” are among the attractive features of markets. This is not to say, however, that markets make norms redundant; where contracts are incomplete or unenforceable, trustworthiness and other norms facilitate exchange. Arrow (1971, p. 22) writes:

In the absence of trust . . . opportunities for mutually beneficial cooperation would have to be foregone . . . norms of social behavior, including ethical and moral codes [may be] . . . reactions of society to compensate for market failures.

But if, as Schultze and Hayek say, markets make fewer demands on people’s elevated motivations, the impersonal and ephemeral nature of market interactions also affect the benefits and costs of acquiring cultural traits affecting socially valued behaviors. Markets thus affect not only the demand for, but also the supply of cultural traits. Among these are reputations for trustworthiness, generosity, and vengefulness.

Where markets govern the exchange of well defined (meaning third party enforceable) property rights, reputations of any kind will tend to be both costly for people to acquire and of little benefit to those who do, and for these reasons unlikely to be favored by differential replication. A consequence is that markets lack the personal element of non-market connections, and as Ben-Porath (1980, p. 18) writes, with “[t]he development of markets . . . the benefits from a connection decline as identity becomes less important.” Thus where markets approximate the ideal

complete-contracting assumptions of the standard model, the adverse consequences of lack of trustworthiness or generosity may be attenuated; but at the same time markets may militate against the evolution of these traits. Thus markets may undermine the reproduction of traits necessary for efficient market transactions in the absence of complete contracting.

To see how this might be the case, I will consider a subset of norms which I call *nice traits*; these are behaviors which in social interactions confer benefits on others. Others would like to be paired with those exhibiting nice traits in an interaction. Included are such strategies as conditional or unconditional cooperation in a prisoners’ dilemma game, contributing rather than withholding in a public goods game, or playing dove in a hawk-dove game.²¹ As my subsequent examples will confirm, it is not possible to generalize about the effect of markets on socially valued norms: “nice traits” may sustain collusion where competition would be more socially beneficial, for example (Rose-Ackerman 1997). Using a model similar to that presented above, I (1996) show that allocation rules which closely conform to idealized markets may support lower equilibrium population frequencies of nice traits, by comparison with alternative allocation rules which deviate from the market ideal. The intuition behind this result is that behaviors determined by nice traits affect others in non-contractible ways, and the regulation of non-contractible behaviors through market-like interactions gener-

²¹ Bowles (1996) gives the following definition: in a population with traits x and x' the latter indicating all other traits, x is a nice trait if $\pi(x,x) > \pi(x,x')$, $\pi(x',x) > \pi(x',x')$, and $\pi(x,x) > \pi(x',x')$. Other nice traits are “learn” rather than “imitate” in games of conformism and learning of the type studied by John Conlisk (1980) and Boyd and Richerson (1993).

ates analogues to familiar market failures which in many cases may be attenuated by deviations from the market ideal.

To see why this might be true consider the various ways—identified by biologists, students of cultural evolution, and evolutionary game theorists—that nice traits might flourish in a large population. All, I will suggest, may be weakened by the impersonality and ephemerality of contact that characterize markets. First, frequently repeated interaction of a given pair of individuals provides opportunities to sanction violations of norms and to reward nice traits. By contrast to other allocation rules, the ephemerality and anonymity of market interactions clearly militate against repeated pairings and hence against this mechanism for supporting nice traits. Second, frequent interaction of a limited number of people likewise lowers the cost of acquiring information about the recent behaviors of others, thus increasing the value of acquiring a reputation for being “nice.”²² The impersonality and ephemerality of contact in markets clearly militate against these mechanisms favoring nice traits.

The third mechanism—segmentation—is less familiar to economists, having been introduced by biologists as “games among relatives.”²³ Where, as in the model introduced above, popula-

tions are segmented so that individuals of a given “type” tend to interact disproportionately with one another, nice types will be favored. For example, if because of geographical or cultural segmentation, the probability of interacting with one’s own type is greater than the population frequency of the trait, the equilibrium level of the nice trait will exceed the equilibrium distribution of traits in a population under random pairing. The reason is that segmentation partially internalizes the externality associated with the nice trait: the non-random pairing means that the benefits of niceness are disproportionately likely to be conferred on others bearing nice traits, thereby favoring the replication of nice traits. To the extent that the impersonality (and hence anonymity) of markets erodes the bases of segmentation, markets inhibit this mechanism that fosters the proliferation of nice traits.

Finally, socially beneficial culturally transmitted traits may evolve if the pressure of cultural group selection is sufficiently strong. This occurs when the prevalence of nice traits in a subgroup enhances the average performance of the group sufficiently to allow the trait to proliferate even if it is disadvantaged in replication within each group. Group selection pressures vary with the extent of group differences in the distribution of traits among the subgroups in a large population, which in turn depends on the level of migration among groups and the extent to which the formation of new groups contributes to between group differences, for example by favoring the formation of groups which are more homogeneous than the population as a whole (Boyd and Richerson 1990). High entry and exit costs and other supports for population segmentation sustain the group differences which render the pressure of

²² Bowles and Gintis (1997a) define a level of “optimal parochialism” based on the latter mechanism in a model of endogenous group formation in a large population. In a population paired to play one shot prisoners’ dilemma games with the strategy set augmented by an opportunity to pay a cost to determine the type of the other agent and to cooperate if the other is either a cooperator or an “inspector,” the fraction of defectors in a (stable, interior) equilibrium population distribution varies linearly with the cost of inspection.

²³ Grafen (1979) and Robert Axelrod and William Hamilton (1981). Bowles (1996) and Bowles and Gintis (1998) study the effect of segmentation on the evolution of nice traits in a large population.

<i>Model</i>	<i>Effect favoring the replication of nice traits</i>	<i>Necessary structural characteristic</i>	<i>Relationship to idealized markets</i>
Retaliation Taylor (1976), Drew Fudenberg-Eric Maskin (1986)	Punishment of antisocial behaviors	Frequent or long lasting interactions	Unlikely given ephemerality
Reputation Kreps (1990), Carl Shapiro (1983), Bowles and Gintis (1997a)	Enhanced value of reputations for niceness	Low cost of information about others	Unlikely given impersonality, ephemerality
Segmentation Grafen (1979), Hamilton (1975), Axelrod-Hamilton (1981)	Advantageous pairing for those with nice traits	Non random pairing of agents	Unlikely given impersonality, low entry and exit costs
Group selection David Wilson and Elliot Sober (1994), Boyd and Richerson (1990)	Enhanced group selection pressures favor nice traits	Limited intergroup migration, non-random group formation	Unlikely given low entry and exit costs and impersonality

Figure 3. How Markets May Discourage the Evolution of Nice Traits

group selection effective. The low entry and exit costs typical of markets—by comparison to other allocation rules—weakens the pressures of group selection.

Figure 3 summarizes these four mechanisms supporting the replication of nice traits, and the manner in which market allocation rules may undermine them.²⁴ Because these conjectures predict differences between the distribution of cultural traits in whole populations, adequate testing would require comparative data in which entire populations governed by more or less market like arrangements are the units of analysis. As the following studies suggest, however, less demanding tests using experimental data on a common pool of subjects under varying institutional conditions suggest that deviations

from idealized markets may induce “nice behaviors.”

We have seen already that even in experimental markets characterized by complete contracting and distributionally extreme (unfair) equilibrium outcomes, the competitive equilibrium implied by self-regarding preferences is rapidly obtained in a wide variety of subject pools. This does not occur in experimental markets with incomplete contracts. In a series of experiments, Fehr and his co-authors have found that contractual incompleteness induces a pattern of reciprocity among subjects which has durable effects on competitive equilibrium (Fehr and Jean-Robert Tyran 1996; Fehr et al. 1997; and Fehr, Gaechter, and Georg Kirchsteiger 1997). For example in an experimental labor market in which effort is selected by the “worker” after a wage offer is made by the “firm,” the subgame perfect equilibrium based on self-regarding preferences in a one time

²⁴The bibliographic references merely give examples of the relevant models; inferences concerning the relationship between economic institutions and the evolution of norms are my own.

interaction (offer the lowest wage, provide the lowest effort level) does not occur. Rather, “firms” offer wages higher than necessary and “workers” reciprocate by working harder than the minimum.

Relatedly, Kollock (1994, p. 341) investigated “the structural origins of trust in a system of exchange, rather than treating trust as an individual personality variable” with similar results. Using an experimental design based on the exchange of goods of variable quality, Kollock found that trust in and commitment to trading partners as well as a concern for one’s own and others’ reputations emerges when product quality is variable and non-contractible but not when it is contractible. These experimental results appear to capture some of the structure of actual exchanges. Ammar Siamwalla’s (1978) study of marketing structures in Thailand contrasts the impersonal structure of the wholesale rice market—where the quality of the product is readily assayed by the buyer—with the personalized exchange based on trust in the raw rubber market—where quality is impossible to determine at the point of purchase.

These experimental results suggest that trust or reciprocity may depend on the form of the contract, contractual incompleteness leading to trusting and reciprocal behaviors, and conversely. Fehr, Gächter and Kirchsteiger (1997) present a surprising case of this in their experiments with “firms” and “workers.” When they provided more complete contracting of labor effort through monitoring and the imposition of fines on workers in cases of verified shirking, worker effort significantly *declined*. Their interpretation is that explicit incentives may destroy trust- and reciprocity-based incentives.

Outside the experimenter’s lab, of

course, the degree of contractual incompleteness is not exogenous, and it may respond to the levels of trust and reciprocity exhibited by the relevant population of traders. For example, lower levels of trust and reciprocity would plausibly lead those designing contracts and the relevant enforcement environments to be willing to pay more for more complete contracts. Greif’s (1994) analysis of the divergent cultural and institutional trajectories of the Genovese and Maghribi traders in the late medieval Mediterranean provides a well documented historical example. The individualism of the Genovese traders precluded the communitarian enforcement techniques of the Maghribi traders; but it also provided an impetus for the development and perfection of ultimately more successful third party enforcement of claims by the Genovese.

If levels of trust and reciprocity on the one hand and contractual incompleteness on the other are mutually determining one may define an equilibrium set of norms and contracts. If the nature of the mutual influences are as I have suggested, there may be any number of these equilibria, some with high levels of trust and relatively incomplete contracts (like the Maghribi traders) and others with the converse (like the Genovese). If this vastly oversimplified view captures something about the dynamics of cultural change, we might expect rapid shifts in both norms and contracts where exogenous events “tip” the society from the basin of attraction of one norm-contract equilibrium to another. Thus, it seems reasonable that some of the apparently profound cultural changes associated with the extension of markets in previously non-market systems might be explained by the structural characteristics in Figure 3 along with the increasingly contractual

nature of transactions between people and the related incentives to reallocate time and effort away from human investments which are specific to a particular relationship (trust, ethnic or communal capital) and toward general investments (schooling).

Florencia Mallon's (1983) study of the growth of markets—particularly labor markets—and the erosion of community institutions in the central highlands of Peru during the early twentieth century suggests that some of the above mechanisms may have been at work. Central to the institutions of local solidarity among residents was the practice of contributing labor to road building, irrigation, and other communal projects: "Community membership itself, and access to village resources was defined in terms of a quota of labor time that households owed to the community as a whole." With the extension of labor markets, many found employment in distant mines for extended periods of time, eventually converting the labor dues they owed to the community to cash payments collected and sent home by migrants associations in the mining towns. But "migration, by commodifying relationships and separating them out from the intricately woven fabric of local life, was changing the very context within which community could be defined" (Mallon 1983, pp. 264–65).

Traditional institutions were further undermined by the sale of common lands (or charging fees for the use of the common lands) and the use of the proceeds to build schools and roads. Increased access of the richer peasants to distant markets for their produce freed them of dependence on the locality. The obligation to provide communal labor—or even money payments in their stead—thus became unenforceable, and the practice declined. The institutions

which had directed community members' efforts and imagination toward common projects, and the dense network of social relationships sustaining this gave way to investments—schooling and transportation—whose returns were relatively independent of the community social fabric, and contributed little to it.²⁵

The ethnographic literature on the environmental degradation of local commons provides numerous examples of similar processes (Jean-Marie Baland and Platteau 1995).

7. *Markets, Firms, and Tasks*

It is only our Western societies that quite recently turned man into an economic animal. But we are not yet all animals of the same species.

Marcel Mauss ([1925]1967, p. 74)

Learning by doing is a ubiquitous form of personal development; it applies to preferences no less than to skills. The activities we engage in and the tasks they present to us are not fully determined by technology; they depend as well on economic institutions. Thus economic institutions may shape preferences by influencing the tasks we perform.

We know from the experiments of Sherif (1937), Breer and Locke (1965), and others that task performance affects values. Relatedly, a substantial ethnographic literature suggests that differing modes of livelihood are associated with differing general attitudes and values. Edgerton's (1971) cross-cultural comparisons, for example, revealed a large and statistically significant relationship between the predominance of pastoral as opposed to farming livelihoods and the general cultural valuation

²⁵ An analogous process, occurring in Botswana, is described by T. S. Zufferey (1986). See also Raul and Luis Garcia-Barrios (1990).

of independence.²⁶ A plausible mechanism for both the Edgerton and the Breer and Locke findings is that strategies found successful in coping with the tasks defined by one sphere of life are generalized to other realms of life. Because markets and other economic institutions affect the kinds of tasks we confront and structure rewards and penalties to various behaviors, we may presume that they affect learning.

What, then do market tasks teach? Lane (1991, p. 11) reasons that the belief that one is effective in influencing his or her fate (called self-attribution):

is learned from experiences of acting and seeing the world respond, contingent responses. [Because] a transaction . . . requires mutually contingent responses . . . an economy based on transactions teaches self-attribution.

I know of no evidence for or against this plausible conjecture; but if true, the effects on self-attribution may well depend on the structure of the relevant markets.

Consider, first, the following counterintuitive example. Market interactions are particularly likely to contribute to the sense of personal efficacy under conditions which allow what I term consumer sovereignty with teeth—that which occurs when the consumer's purchase confers a rent on the seller because price exceeds marginal cost. In this situation the consumer who switches to another supplier imposes a cost (the loss of the rent) on the seller (Gintis 1989). In this sense monopolistically competitive markets may pro-

²⁶Independent minded people may become herders rather than farmers, of course, but Edgerton's results are robust even when the pastoralism/farming measure is not the actual means of livelihood (e.g., livestock ownership) but rather the geographical suitability of the relevant locale for each of these two pursuits. The relevant correlations are only slightly diminished when the underlying, and presumably exogenous, measure is used.

vide at least as fertile a ground for the development of a sense of personal efficacy as do perfectly competitive markets: the latter will exhibit a larger number of potential suppliers, while the former will exhibit the stronger version of consumer sovereignty (because the consumer confers a rent on the seller whenever $p > mc$) albeit vis à vis a more limited array of suppliers.

If Lane is right that markets teach self-attribution or personal efficacy, the extent to which this is true appears to depend on one's success in market activities: income predicts self-attribution better than other demographic variables including level of schooling; whites are more self-attributing than African Americans; men are more self-attributing than women; and self-attribution rises with age until leveling off in middle age.²⁷

What the market teaches depends not merely on the degree of success as measured by income, but also on the structural location in a market situation. That the inability to find suitable employment may undermine one's sense of efficacy is unsurprising, but having a job can do the same. The relevant feature of the labor market is that it requires employees to relinquish (substantial, but not unlimited) authority

²⁷Gerald Gurin and Patricia Gurin (1976); James Birren, Walter Cunningham, and Koichi Yamamoto (1983). In the former study the normalized regression coefficient of income in a multiple regression predicting a measure of personal efficacy is twice as large as that for education and three times as large as that for race (p. 137). Longitudinal evidence suggests that internality (or self-attribution) and success are mutually determining; while an internal locus of control contributes to success, the reverse is also true (Andrisani and Nestel 1976). The strong relationship between income and self-attribution may thus arise because the more self-attributing people are also more successful (rather than the other way around); but this reasoning obviously does not apply to the substantial correlations with exogenous determinants of economic success such as race, gender, and age.

over their actions to the employer (Herbert Simon 1951). The employer's authority can be effectively wielded because the labor market does not clear, and the employee is thus not indifferent to having the job or losing it (Bowles and Gintis 1992, 1993). Of course employees differ greatly in the degree to which they are subjected to hierarchical authority; and these differences appear to have psychological consequences.

Over a period of three decades Kohn and his collaborators have studied the relationship between one's position in an occupational hierarchy and the individual's valuation of self-direction and independence in their children, intellectual flexibility, and personal self-directedness, concluding that "the experience of occupational self direction has a profound effect on people's values, orientation, and cognitive functioning" (Kohn et al. (1990), p. 967; see also Kohn 1969, 1990). His collaborative study of Japan, the U.S. and Poland (1990) based on sample surveys of male employees (from the 1960s and 1970s) yielded cross culturally consistent findings: people who exercise self-direction on the job, also value self-direction more in other realms of their life (including child-rearing and leisure activities) and are less likely to exhibit the nexus of traits termed the authoritarian personality. (See Kohn and Schooler 1983, p. 142.)

These results do not arise because self-directed people select (or are selected into) jobs where occupational self-direction is substantial. In a series of related studies using longitudinal data, Kohn and his colleagues use two stage least squares estimation to address the question of reciprocal causation (personality dimensions as causes of job position); effects in both directions are found, but the job to per-

sonality causal effects are robust.²⁸ Compared to direct measures of occupational self-direction, covarying influences such as income, race, ethnicity, family structure, religion, and education were considerably less robust and consistent predictors of personality and tastes.

Kohn and his co-authors reason that "social structure affects individual psychological functioning mainly by affecting the conditions of people's own lives." Summarizing his earlier work on child rearing, Kohn (1969, p. 189) wrote:

Self direction, in short, requires opportunities and experiences that are much more available to people who are more favorably situated in the hierarchical order of society; conformity is the natural consequence of inadequate opportunity to be self-directed.

But why should work experiences affect child-rearing values and leisure time preferences? Kohn concludes that:

The simple explanation that accounts for virtually all that is known about the effects of job on personality . . . is that the processes are direct: learning from the job and extending those lessons to off-the job realities.²⁹

Thus, just as the wide range of choices and contingent reinforcement characteristic of consumer goods markets may

²⁸ See Kohn and Carrie Schoenbach (1983). Jeylan Mortimer, Jon Lorence, and Donald Kumka (1986, p. 113) use similar methods to address the problem of endogeneity of occupational selection, and report a substantial causal effect of occupationally determined work autonomy on the sense of self-confidence.

²⁹ Kohn (1990, p. 59). Gabriel Almond and Sidney Verba (1963, pp. 180ff, 364ff) provide further evidence that work experiences are associated with generalized subjective orientations. Across all occupational types in five different countries, those who were consulted on the job scored significantly higher on a measure of subjective civic competence measuring the sense of personal efficacy in dealing with local and national government bodies. Differences (between those consulted and those not) in subjective competence scores within broad job types were larger than the differences between job types.

promote personal efficacy, the surrender of authority to employers which characterizes the labor market appears to support far-reaching psychological effects, some of which undermine the sense of being in control of one's life.

Unlike Kohn's studies, most research on the relationship between job structures and personality do not adequately address the problem of mutual causation mentioned above. Robert Karasek (1978) however, was able to study the behavioral effects of exogenous *changes* in job structure (including both expert and self-reports of job characteristics) using panel data on the Swedish labor force over the years 1968–1974, a period of considerable experimentation with job redesign. He found that;

workers whose jobs had become more passive also became passive in their leisure and political participation and workers with more active jobs became more active. These findings were significant in eight out of nine sub-populations controlled for education and family class background. Karasek (1990, pp. 53–54)

The effect of economic institutions on task performance and hence on personality may go beyond those stressed by Kohn and Lane. The seemingly desirable attribute of markets stressed by Schultze above—that they make few demands on our ethical reasoning—may have a negative counterpart in a reduced salience of moral concerns or capacity for moral reasoning. A recent public goods experiment suggests that these market effects may be important (Norman Frohlich and Joe Oppenheimer 1995). Subjects played five-person public goods games under two conditions: one group played the standard contribution game and the other played a modified game in which a randomized assignment of payoffs similar to the Rawlsian veil of ignorance made it opti-

mal to contribute the maximal amount to the public good. Half of the subjects (in each treatment) were allowed to engage in discussion prior to each play (of course the discussion should have had no effect on the outcome of the standard game, as the dominant strategy is to contribute nothing). After eight rounds of play another seven rounds were conducted, this time with the same groups but with all playing the standard game. Among those who had been permitted discussion, those who had experienced the incentive compatible modified game contributed significantly less in the final seven rounds than those whose only experience was the standard game, and (in subsequent questionnaires) revealed that their behavior was less guided by considerations of fairness.

The authors' explanation of this striking finding is that the incentive compatible mechanism rewarded those contributing to the public good, thus making self interest a good guide to action, while those experiencing the standard game succeeded only to the extent that they evoked considerations of fairness as a distinct motive. They conclude

The failure of the . . . (incentive compatible) mechanism to confront subjects with an ethical dilemma appears to lead to little or no learning in ethical behavior in the subsequent period. . . . It is an institution, like other incentive compatible devices, which can generate near optimal outcomes. . . . However from an ethical point of view it is not only unsuccessful as pertains to subsequent behavior; it appears to be actually pernicious. It undermines ethical reasoning and ethically motivated behavior. (Frohlich and Oppenheimer 1995, p. 44)

Thus far I have considered the direct effects of markets and other economic institutions on the evolution of preferences. But there are indirect effects as well.

8. *Markets and the Process of Cultural Transmission*

... the modern and the traditional consciousness of the [early 19th century] French peasant contended for mastery [in]. . . the form of an incessant struggle between the schoolmasters and the priests.

Karl Marx ([1852]1963, p. 125)

Here I consider the influence of economic institutions on the structure of social interactions which make up the process of cultural transmission, that is on child-rearing practices, childhood and adolescent socialization, and the availability of and sometimes compulsory exposure to entirely new cultural models such as teachers and media figures. Some of these effects are the intentional result of people's attempt to acquire and to teach their children those traits required for adequate functioning in the social system; other effects are entirely unintended.

One avenue for the effects of economic organization on cultural transmission, the existence of a connection between forms of livelihood and patterns of child rearing, has been widely documented. Herbert Barry, Irvin Child, and Margaret Bacon (1959) categorized 79 mostly non-literate societies according to the prevalent form of livelihood (animal husbandry, agricultural, hunting, and fishing) and the related ease of food storage or other forms of wealth accumulation, the latter being a well documented correlate of dimensions of social structure such as stratification. They combined these with evidence on the dominant forms of child rearing including obedience training, self-reliance, independence, and responsibility. They found large differences in the recorded child-rearing practices, concluding: "knowledge of the economy alone would enable one to predict with considerable accuracy

whether a society's socialization pressures were primarily toward compliance or assertion."³⁰ Other studies have confirmed consistent relationships between these group differences in child-rearing practices and group differences in various measures of psychological functioning (Witkin and Berry, 1975). For example, hunter gatherer societies stress in their child rearing (and achieve in their adults) greater independence, while more stratified agricultural societies stress (and achieve) greater obedience.

These results suggest economic structural effects on child rearing and thereby on personality, but do not shed light on the effects of modern economic institutions; indeed markets played a limited role in most of the societies studied by Barry, Bacon, and Child and Witkin and Berry. The expansion of markets may have had its largest impact in rendering inadequate the previously dominant family-based and heterogeneous forms of socialization studied by these authors. Ernest Gellner's (1983) account of the rise of nationalism is based on the transformation of socialization required by the spatial extension of the division of labor made possible by markets:

In the closed local communities of the agrarian or tribal worlds, when it came to communication, context, tone, gesture, personality and situation were everything . . . Among intimates of a close community, explicitness would have been pedantic and offensive [p. 33] . . . [but] the requirements of a modern

³⁰The statistical relationships observed were not explainable by the covariation of child-rearing practices and type of livelihood with other measures of social structure such as unilinearity of descent, extent of polygyny, levels of participation of women in the predominant subsistence activity, size of population units, and the like. A society-level rather than individual approach has been adopted in much of the cross cultural literature on child rearing. See the work of Beatrice and John Whiting (Whiting 1963; J. and B. Whiting 1975).

economy obliges [us] to be able to communicate contextlessly and with precision with all comers in face to face ephemeral contacts. (p. 140)

This requires

sustained frequent and precise communication between strangers involving a sharing of explicit meaning, transmitted in a standard idiom and in writing when required. For a number of converging reasons this society must be exo-educational: each individual is trained by specialists, not just by his own local group, if indeed he has one. (p. 34)

As a result there emerged “a school transmitted culture not a folk transmitted one” (p. 36) in which children were “handed over by their kin groups to an educational machine” (p. 37). Universal schooling may be represented as a particular assignment of cultural models to children, one unprecedented in its divorce from family and degree of centralization.³¹ As a result the cultural transmission processes became markedly more conformist as cultural models were selected from (or by) dominant groups and a society-wide socialization system intruded into what was once an entirely local learning process.

We know strikingly little about the cultural impact of these historically novel forms of socialization; most studies of the impact of schooling and its relationship to the economy have stressed the contribution of schooling to cognitive functioning, not to values or personality. But the evidence that personality effects of schooling are important is substantial, if indirect. The substantial and apparently causal relationship between years of schooling attained by an individual and subsequent labor market earnings presents a puzzle,

for available data suggests that a large part of the schooling-earnings relationship is not mediated by the effect of schooling on the level of cognitive functioning. Schools make people smarter, and richer, but the latter effect—at least in the U.S.—is surprisingly independent of the former. The relevant evidence is this: the estimated effect of schooling on earnings is only modestly reduced if the individual level of cognitive skill is econometrically “held constant” by inclusion in an earnings function.³²

Gintis and I (1997b) suggest that schooling may raise earnings through its contribution to the acquisition of such personality traits as a lower rate of time preference, a lower disutility of effort, or a cooperative relationship to authority figures, which are relevant to the work situation but which are not measured on the existing cognitive measures. We motivate this hypothesis using a standard principal agent model of the problem of labor discipline in an employment relationship characterized by incomplete contracts. If we are right, the structure of schooling would contribute to preparation for adult roles in a manner not dissimilar to that suggested by the Bacon, Child, and Barry study. But do schools produce these non-cognitive employment related traits?

To the best of my knowledge only one study has attempted to provide an answer; it does not provide a satisfactory basis for generalization, but it is nonetheless worth reviewing. The strategy of the study was to see if schools rewarded (and thus inferentially fostered the development of) people with the same personality traits that are valued by employers. In parallel investiga-

³¹ Robert Dreeben’s (1968) book on the socialization tasks of schooling develops a similar argument based on “the liberating effect” of “the separation of the workplace from the household” (p. 129). See also Gintis (1971) and Bowles and Gintis (1997b).

³² Gintis (1971) first demonstrated this. Bowles and Gintis (1997b) reviews the large number of relevant estimates over a 40 year period.

tions in distinct populations conducted during the early 1970s, Richard Edwards (1977) used peer-rated personality measures of employees in both private and public employment to predict supervisor ratings of these workers. Peter Meyer (1972) used the same peer rated personality variables to predict grade point averages of students in a high school, controlling for SAT (verbal and math) and IQ. Edwards found that employees judged by their workplace peers to be “perseverant,” “dependable,” “consistent,” “punctual,” “tactful,” “identifies with work,” and “empathizes” had significantly higher supervisor ratings, while those judged by their peers to be “creative” and “independent” were ranked poorly by supervisors. Meyer found virtually identical results for the high school students in his grading study: the exact traits predicting favorable supervisor ratings in the Edwards study, predicted good grades (holding constant cognitive scores). Teachers and employers in these samples reward the same personality traits.³³

9. Conclusion

Political writers have established it as a maxim, that, in contriving any system of government . . . every man ought to be supposed to be a knave and to have no other end, in all his actions, than his private interest.

David Hume ([1754]1898 p. 117)

Lawgivers make the citizen good by inculcating habits in them, and this is the aim of every lawgiver; if he does not succeed in doing that, his legislation is a failure. It is in this that a good constitution differs from a bad one.

Aristotle (1962, p. 1103)

³³We would like to know (but do not) if schools produce the traits they reward, and if traits valued by supervisors are rewarded by enhanced pay. The underlying studies are reported and compared in Bowles and Gintis (1976).

Economists have followed Hume, rather than Aristotle, in positing a given and self-regarding individual as the appropriate behavioral foundation for considerations of governance and policy. The implicit premise that policies and constitutions do not affect preferences has much to recommend it: the premise provides a common if minimal analytical framework applicable to a wide range of issues of public concern, it expresses a prudent antipathy toward paternalistic attempts at social engineering of the psyche, it modestly acknowledges how little we know about the effects of economic structure and policy on preferences, and it erects a barrier both to ad hoc explanation and to the utopian thinking of those who invoke the mutability of human dispositions in order to sidestep difficult questions of scarcity and social choice. Realism, however, cannot be among the virtues invoked on behalf of the exogenous preferences premise.³⁴ Economic institutions, we have seen, may affect preferences through their direct influences on situational construal, forms of reward, the evolution of norms, and task related learning as well as their indirect effects on the process of cultural transmission itself.

One hopes that the active research agenda now being pursued by economists, other social scientists and biologists in this area may soon allow more

³⁴Indeed Hume, immediately following the passage just quoted, muses that it is “strange that a maxim should be true in politics which is false in fact.” While in academic settings most economists still adhere to the exogenous preferences canon and its “*de gustibus non est disputandum*” (George Stigler and Becker 1977) implication, many appear aware of its limitations when it comes to evaluating institutions and policies. Thus Becker (1995, p. 26) refers to “the effects of a free-market system on self-reliance, initiative, and other virtues” and referring to government transfers to the poor, claims that “the present system corrupts the values transmitted to children.”

confidence in assessing the empirical magnitude and generality of these effects.³⁵ The following research priorities seem particularly important.

First, we know very little about the process of cultural transmission—who acquires what trait from whom, under what conditions, and why. Yet this information is critical to understanding how economic institutions may impact on preferences. Empirical studies of the relative importance of parents, other family members, friends, teachers, and others in cultural learning, and the interplay of cultural and genetic transmission would be very valuable.

Second, while we have evidence that traits acquired in one environment are then generalized to others (recall Kohn's studies of child rearing) we do not know how this takes place or how persistent the traits may be once the initiating environment is withdrawn.

Third, because imitation of prevalent traits, or enforced conformism may play an important role in the transmission of cultural traits, comparative studies of whole societies may provide insights not available in individual-based studies. An example may make this clear. Recall that Edgerton (1971, p. 195) found that pastoralists valued independent action more than farmers. But farmers in a predominantly pastoral tribe valued independence more (almost twice as much by his measure) than farmers in predominantly farming tribes, while pastoralists in predominantly farming tribes valued independence considerably less than did pastoralists in the pastoral tribe. Thus it appears that the predominant livelihood in a tribe may have cultural effects beyond the effects of the livelihood of the individual. Analysis of individual data within a single cul-

tural group this may miss important effects of economic institutions operating on group differences. Comparative analysis of economic experiments implemented in the differing economic environments of distinct societies, including those with premodern economic institutions, would be illuminating.

I emphasize empirical studies because the proliferation of relevant theoretical models in economics has not been matched by empirical investigation. But important contributions could be made by two types of conceptual work.

Fourth, experiments in economics, sociology, and psychology have raised serious doubts about the behavioral accuracy of the minimalist conception of *homo economicus*: the individual actor with self-regarding and outcome-based preferences. Much of the impact of economic institutions on behavior may occur through the ways that particular institutional settings prompt individuals to draw one or another response—whether self-regarding, spiteful, generous, or other—from their varied behavioral repertoires. A concept of preferences more adequately grounded in the empirical study of behavior would assist in analyzing these processes.

Finally, an integration of the insights of the theory of cultural evolution with those of evolutionary game theory seems likely to be insightful, especially in view of the apparent importance of conformism in cultural transmission (and hence the needed modification of the concept of cultural equilibrium as suggested in Section 3).

Shortcomings of the existing empirical studies and the unsatisfactory “black box” nature of extant knowledge of social learning notwithstanding, the weight of both reason and evidence point strongly to the endogeneity of preferences. If preferences are indeed

³⁵ Avner Ben-Ner and Louis Putterman (1997) is a valuable collection of relevant work by economists.

endogenous in the senses suggested here, four implications follow.

First, economics pays a heavy price for its self-imposed isolation from the other behavioral sciences. At its simplest, the conception underlying contemporary disciplinary boundaries is one of society marked by an implausible degree of specialization among institutions: families and religious institutions shape culture, governments govern, and economic institutions allocate resources. These disciplinary boundaries have favored the development of parochial, incompatible, and inadequate models of human behavior in the various disciplines, ranging from the oversocialized homo sociologicus to the undersocialized homo economicus (Mark Granovetter 1985). Recognition of the cultural effects of markets (and other economic institutions) may foster a more unified approach to the behavioral sciences, a benefit of which might be the more successful resolution of outstanding puzzles in economics.³⁶

Second, the effectiveness of policies and their political viability may depend on the preferences they induce or evoke.³⁷ Hirschman (1985, p. 10) points

³⁶ For example, given the poor empirical showing of most theories of wages (Truman Bewley 1995) an adequate understanding of wage setting institutions—including why employers do not generally charge job fees (H. Lorne Carmichael 1985)—would seem to require an account embracing effects of wages on such preferences as the disutility of labor and perceptions of just treatment, along lines suggested by Akerlof's (1984) analysis of gift exchange and Robert Solow's (1990) treatment of "labor markets as social institutions," as well as the work of Fehr and his co-author mentioned above.

³⁷ Romer's (1996) account of the origins and evolution of the social security system addresses the ways that income transfer programs shape preferences; and Frey's (1997) econometric study of tax compliance in Switzerland explores the way that different constitutional arrangements affect a predisposition to tax avoidance. On the importance of considering the impact of environmental policy on environmental preferences see Cass Sunstein (1993).

out that economists typically assume otherwise and for this reason propose

to deal with unethical or antisocial behavior by raising the cost of that behavior rather than proclaiming standards and imposing prohibitions and sanctions. The reason is probably that they think of citizens as consumers with unchanging or arbitrarily changing tastes in matters civic as well as commodity-related behavior. . . . A principal purpose of publicly proclaimed laws and regulations is to stigmatize antisocial behavior and thereby to influence citizens' values and behavioral codes.

Frohlich and Oppenheimer's and Fehr and Gächter's experiments above suggest that raising the cost of an antisocial behavior and other incentive compatible devices may actually do harm. Moreover, the analysis in Section 6 of the evolution of nice traits suggests that approximating the market ideal by perfecting property rights may weaken non-market solutions to problems of social coordination. There is thus a norm-related analogue to the second best theorem of welfare economics: *where contracts are incomplete (and hence norms may be important in attenuating market failures), more closely approximating idealized complete contracting markets may exacerbate the underlying market failure (by undermining the reproduction of socially valuable norms such as trust or reciprocity) and result in a less efficient equilibrium allocation.* An analogous caution applies to governmental, family based, or other solutions: for example, numerous experiments (as we have seen) suggest that "earning" a claim on a resource differs in psychologically important ways from simply receiving one, and an adequate understanding of public transfers would seem to require attention to these effects.

Third, preference endogeneity gives rise to a kind of market failure and suggests a reconsideration of some aspects of normative economics. The influence

of our preferences on others is not even approximately captured by contracts: norms of generosity, non-aggression, or punishment of antisocial behaviors confer external benefits for example, while a taste (or addiction) for smoking confers external costs. Because our preferences have non-contractual effects on others, how we acquire them is a matter of public concern.

Just as the process of natural selection does not generally maximize average fitness, there is no reason to expect that the process of cultural transmission determining the equilibrium distribution of traits in the population will support a socially optimal outcome. The cultural equivalent of a market failure thus results; indeed the long-term persistence of socially and even individually disadvantageous norms is hardly open to question, extreme forms of blood revenge representing a particularly well documented example (Jon Elster 1989; Edgerton 1992; Boehm 1984). Because states, communities, and markets may influence the process of cultural evolution, any normative evaluation of the role and scope of these institutions must attempt to take their cultural effects into account.

Fourth, there thus may be a novel public interest in some types of economic arrangements which are commonly considered private. Uncoerced exchange among informed adults is often considered a private realm in which there is no public interest the absence of non-contractual effects on third parties. The philosopher David Gauthier (1986, pp. 95–96) writes “The operation of the market cannot in itself raise any evaluative issues . . . The presumption of free activity ensures that no one is subject to any form of compulsion or any type of limitation not already affecting her own actions as a solitary individual.” But if preferences

are shaped by markets and other economic institutions, both evaluative issues and a public interest may arise, for an individual’s preferences induce actions imposing non-contractible costs and benefits on others. Thus part of the reasoning which conventionally establishes a public interest in the nature and amount of schooling—the socialization of children is to some extent a public good—would seemingly apply to the effects of economic institutions on preferences as well.

A broader concept of market failure is thus required, one encompassing the effects of economic policies and institutions on preferences and for this reason more adequate for the consideration of an appropriate mix of markets, communities, families, and states in economic governance.³⁸ Such a new welfare economics would of course have to confront the longstanding liberal philosophical reluctance to privilege some ends over others; that is, it would have to address the problem that Hobbes’ mushroom fiction ellides.

³⁸An example of the reasoning I am recommending is Michael Taylor’s (1987) suggestion that the kinds of opportunism which the Hobbesian state is said to curb might be the consequence of living under a centralized authority, or more succinctly that the Hobbesian state produces Hobbesian man (and then more or less successfully curbs him). Analogous reasoning may apply to markets and homo economicus.

REFERENCES

- AKERLOF, GEORGE A. “A Theory of Social Custom, of Which Unemployment May Be One Consequence,” in *An economic theorist’s book of tales: Essays that entertain the consequences of new assumptions in economic theory*. GEORGE A. AKERLOF. Cambridge: Cambridge U. Press, 1984, pp. 69–99.
- ALMOND, GABRIEL A. AND VERBA, SIDNEY. *The civic culture: Political attitudes and democracy in five nations*. Princeton: Princeton U. Press, 1963.
- ANDRE, CATHERINE AND PLATTEAU, JEAN-PHILIPPE. “Land Relations Under Unbearable Stress: Rwanda Caught in the Malthusian Trap,” *J. Econ. Behav. Organ.*, 1997, 34(1), pp. 1–55.

- ANDRISANI, PAUL J. AND NESTEL, GILBERT. "Internal-External Control as Contributor and Outcome of Work Experience." *J. Appl. Psych.*, 1976, 61(2), pp. 156-65.
- ARISTOTLE. *Nicomachean ethics*. Indianapolis: Bobbs-Merrill, 1962.
- ARROW, KENNETH J. "Political and Economic Evaluation of Social Effects and Externalities," in MICHAL D. INTRILIGATOR 1971, pp. 3-24.
- . "Gifts and Exchanges," *Philosophy and Public Affairs*, 1972, 1(4), pp. 343-62.
- ASCH, SOLOMON E. *Social psychology*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1952.
- AXELROD, ROBERT AND HAMILTON, WILLIAM D. "The Evolution of Cooperation," *Science*, Mar. 1981, 211(27), pp. 1390-96.
- BALAND, JEAN-MARIE AND PLATTEAU, JEAN-PHILIPPE. *Halting degradation of natural resources—Is there a role for rural communities?* Oxford: Clarendon Press, 1995.
- BARRY, HERBERT, III; CHILD, IRVIN L. AND BACON, MARGARET K. "Relation of Child Training to Subsistence Economy," *American Anthropologist*, Feb. 1959, 61(1), pp. 51-63.
- BECKER, GARY S. "The Best Reason to Get People off the Dole," *Business Week*, May 1, 1995, p. 26.
- . *Accounting for tastes*. Cambridge, MA: Harvard U. Press, 1996.
- BELL, DANIEL. *The cultural contradictions of capitalism*. New York: Basic Books, 1976.
- BEN-NER, AVNER AND PUTTERMAN, LOUIS, eds. *Economics, values, and organizations*. Cambridge: Cambridge U. Press, 1997.
- BEN-PORATH, YORAM. "The F-Connection: Families, Friends, and Firms and the Organization of Exchange," *Population Devel. Rev.*, Mar. 1980, 6(1), pp. 1-30.
- BEWLEY, TRUMAN F. "A Depressed Labor Market as Explained by Participants," *Amer. Econ. Rev.*, 1995, 85(2), pp. 250-54.
- BIRREN, JAMES E.; CUNNINGHAM, WALTER R. AND YAMAMOTO, KOICHI. "Psychology of Adult Development and Aging," *Annual Review of Psychology*, 1983, 34, pp. 543-75.
- BISIN, ALBERTO AND VERDIER, THIERRY. "The Economics of Cultural Transmission and the Dynamics of Preferences." Unpublished paper, Massachusetts Institute of Technology and CERAS, Mar. 1996.
- BLAU, PETER M. *Exchange and power in social life*. New York: John Wiley and Sons, 1964.
- BLISS, CHRISTOPHER J. "Review of R. M. Titmuss, *The gift relationship: From human blood to social policy*," *J. Public Econ.*, 1972, 1, pp. 162-65.
- BLOOM, BENJAMIN S. *Stability and change in human characteristics*. New York: John Wiley & Sons, Inc., 1964.
- BOEHM, CHRISTOPHER. *Blood revenge: The anthropology of feuding in Montenegro and other tribal societies*. U. of Pennsylvania Press, 1984.
- . "Egalitarian Behavior and Reverse Domi-
nance Hierarchy," *Current Anthropology*, June 1993, 34(3), pp. 227-54.
- BOHANNAN, PAUL. "The Impact of Money on an African Subsistence Economy," *J. Econ. Hist.*, Dec. 1959, 19(4), pp. 491-503.
- BOWLES, SAMUEL. "Markets as Cultural Institutions: Equilibrium Norms in Competitive Economies." Working paper 1996-5. Dept. of Economics, U. of Massachusetts, June 25, 1996.
- BOWLES, SAMUEL AND GINTIS, HERBERT. *Schooling in capitalist America: Educational reform and the contradictions of economic life*. New York: Basic Books, Inc., 1976.
- . *Democracy and capitalism: Property, community, and the contradictions of modern social thought*. London: Routledge and Kegan Paul, 1986.
- . "Power and Wealth in a Competitive Capitalist Economy," *Philosophy & Public Affairs*, Fall 1992, 21(4), pp. 324-53.
- . "The Revenge of Homo Economicus: Contested Exchange and the Revival of Political Economy," *J. Econ. Perspectives*, Winter 1993, 7(1), pp. 83-102.
- . "Optimal Parochialism: The dynamics of trust and exclusion in communities." Unpublished paper, U. of Massachusetts, 1997a.
- . "Labor Discipline and the Returns to Schooling." Unpublished paper, Department of Economics, U. of Massachusetts, July 1997b.
- . "The Moral Economy of Communities: Structured Populations and the Evolution of Pro-Social Norms," *Evolution and Human Behavior*, Jan. 1998, 19(1).
- BOYD, ROBERT AND RICHESON, PETER J. *Culture and the evolutionary process*. Chicago and London: U. of Chicago Press, 1985.
- . "Group Selection among Alternately Evolutionarily Stable Strategies," *Journal of Theoretical Biology*, 1990, 145, pp. 331-42.
- . "Rationality, Imitation, and Tradition," in *Nonlinear dynamics and evolutionary economics*. Eds.: RICHARD H. DAY AND PING CHEN. New York: Oxford U. Press, 1993, pp. 131-51.
- BOYER, PAUL AND NISSENBAUM, STEPHEN. *Salem possessed: The social origins of witchcraft*. Cambridge, MA: Harvard U. Press, 1974.
- BREER, PAUL E. AND LOCKE, EDWIN A. *Task experience as a source of attitudes*. Homewood, IL: The Dorsey Press, 1965.
- BUCHANAN, JAMES M. *The limits of liberty*. Chicago: U. of Chicago Press, 1975.
- BURRIDGE, KENELM. *New heaven, new earth: A study of millenarian activities*. New York: Schocken Books, 1969.
- CAMERER, COLIN F. AND KUNREUTHER, HOWARD. "Decision Processes for Low Probability Events: Policy Implications," *J. Policy Anal. Manage.*, 1989, 8(4), pp. 565-92.
- CAMERER, COLIN AND THALER, RICHARD H. "Anomalies: Ultimatums, Dictators and Manners," *J. Econ. Perspectives*, Spring 1995, 9(2), pp. 209-19.
- CAPORAEL, LINNDA R. ET AL. "Selfishness Exam-

- ined: Cooperation in the Absence of Egoistic Incentives," *Behavioral and Brain Sciences*, 1989, 12, pp. 683–99.
- CARMICHAEL, H. LORNE. "Can Unemployment Be Involuntary? Comment," *Amer. Econ. Rev.*, Dec. 1985, 75(5), pp. 1213–14.
- CAVALLI-SFORZA, LUIGI L. AND FELDMAN, M. W. *Cultural transmission and evolution: A quantitative approach*. Princeton: Princeton U. Press, 1981.
- CAVALLI-SFORZA, L. L. ET. AL. "Theory and Observation in Cultural Transmission," *Science*, Oct. 1, 1982, 218, pp. 19–27.
- CHEN, KUANG-HO; CAVALLI-SFORZA, L. L. AND FELDMAN, M. W. "A Study of Cultural Transmission in Taiwan," *Human Ecology*, Sept. 1982, 10(3), pp. 365–82.
- CONLISK, JOHN. "Costly Optimizers versus Cheap Imitators," *J. Econ. Behav. Organ.*, Sept. 1980, 1(3), pp. 275–93.
- DAWES, ROBYN M.; VAN DE KRAGT, ALPHONS J. C. AND ORBELL, JOHN M. "Not Me or Thee but We: The Importance of Group Identity in Eliciting Cooperation in Dilemma Situations: Experimental Manipulations," *Acta Psychologica*, 1988, 68, pp. 83–97.
- DECI, EDWARD L. *Intrinsic motivation*. New York: Plenum Press, 1975.
- DECI, EDWARD L. AND RYAN, RICHARD M. *Intrinsic motivation and self-determination in human behavior*. New York and London: Plenum Press, 1985.
- DREEBEN, ROBERT. *On what is learned in school*. Reading: Addison-Wesley, 1968.
- DUESENBERY, JAMES STEMBLE. *Income, saving and the theory of consumer behavior*. Cambridge, MA: Harvard U. Press, 1949.
- DURHAM, WILLIAM H. *Coevolution: genes, culture, and human diversity*. Stanford: Stanford U. Press, 1991.
- DURKHEIM, EMILE. *The division of labor in society*. New York: Free Press, [1933] 1964.
- ECKERT, PENELOPE. "Clothing and Geography in a Suburban High School," in *Researching American culture*. Ed.: CONRAD PHILLIP KOTAK. Ann Arbor: The U. of Michigan Press, 1982, pp. 139–44.
- . "Adolescent Social Structure and the Spread of Linguistic Change," *Language in Society*, June 1988, 17(2), pp. 183–207.
- EDGERTON, ROBERT B. *The individual in cultural adaptation*. Berkeley: U. of California Press, 1971.
- . *Sick societies: Challenging the myth of primitive harmony*. New York: Free Press, 1992.
- EDWARDS, RICHARD C. "Personal Traits and 'Success' in Schooling and Work," *Educational and Psychological Measurement*, 1977, 37, pp. 125–38.
- ELSTER, JON. "Social Norms and Economic Theory," *J. Econ. Perspectives*, Fall 1989, 3(4), pp. 99–117.
- ENSMINGER, JEAN. *Making a market: The institutional transformation of an African society*. Cambridge: Cambridge U. Press, 1992.
- EPSTEIN, T. SCARLETT. *Economic development and social change in south India*. Manchester: U. Press, 1962.
- FEHR, ERNST; GAECHTER, SIMON AND KIRCHSTEIGER, GEORG. "Reciprocity as a Contract Enforcement Device. Experimental Evidence," *Econometrica*, July 1997, 65(4) pp. 833–60.
- FEHR, ERNST ET AL. "When Social Norms Overpower Competition—Social Exchange in Experimental Labor Markets," *J. Labor Econ.*, forthcoming.
- FEHR, ERNST AND TYRAN, JEAN-ROBERT. "Institutions and Reciprocal Fairness," *Nordic J. Pol. Economy*, 1996, 23(2), pp. 133–44.
- FELDMAN, MARCUS W.; AOKI, KENICHI AND KUMM, JOCHEN. "Individual Versus Social Learning: Evolutionary Analysis in a Fluctuating Environment." Working Paper No. 96–05–030, Santa Fe Institute, Mar. 14, 1996.
- FELDMAN, MARCUS W. AND LALAND, KEVIN N. "Gene-Culture Coevolutionary Theory." Working Paper No. 96–05–033, Santa Fe Institute, Mar. 14, 1996.
- FIELD, MARGARET J. *Search for security: An ethno-psychiatric study of rural Ghana*. Evanston, IL: Northwestern U. Press, 1960.
- FIRTH, RAYMOND W. "Work and Wealth of Primitive Communities," in *Human types: An introduction to social anthropology*. By RAYMOND W. FIRTH. New York: Mentor Books, 1958, pp. 62–81.
- FISKE, ALAN PAGE. *Structures of social life: The four elementary forms of human relations*. New York: Free Press, 1991.
- . "The Four Elementary Forms of Sociality: Framework for a Unified Theory of Social Relations," *Psychological Review*, Oct. 1992, 99(4), pp. 689–723.
- FLORA, JANE; MACCOBY, NATHAN AND FARQUHAR, JOHN W. "Communication Campaigns to Prevent Cardiovascular Disease: The Stanford Community Studies," in *Public communication campaigns*. 2nd ed. Eds.: RONALD E. RICE AND CHARLES K. ATKIN. Newbury Park: Sage, 1989, pp. 233–52.
- FREY, BRUNO S. "A Constitution for Knaves Crowds Out Civic Virtue," *Econ. J.*, July 1997, 107(443), pp. 1043–53.
- FREY, BRUNO S. AND OBERHOLZER-GEE, FELIX. "The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-out," *Amer. Econ. Rev.*, 1997, 87(4), pp. 746–55.
- FROLICH, NORMAN AND OPPENHEIMER, JOE A. "The Incompatibility of Incentive Compatible Devices and Ethical Behavior: Some Experimental Results and Insights," *Public Choice Studies*, 1995, 25, pp. 24–51.
- FROMM, ERICH AND MACCOBY, MICHAEL. *Social character in a Mexican village: A sociopsychanalytic study*. Englewood Cliffs, NJ: Prentice-Hall, 1970.
- FUNDENBERG, DREW AND MASKIN, ERIC. "The

- Folk Theorem in Repeated Games with Discounting or with Incomplete Information," *Econometrica*, May 1986, 54(3), pp. 533-54.
- GAECHTER, SIMON AND FEHR, ERNST. "Collective Action as a Partial Social Exchange." Unpublished paper, Institute for Empirical Research in Economics, U. of Zurich, May 1997.
- GARCIA-BARRIOS, RAUL AND GARCIA-BARRIOS, LUIS. "Environmental and Technological Degradation in Peasant Agriculture: A Consequence of Development in Mexico," *World Devel.*, Nov. 1990, 18(11), pp. 1569-85.
- GAUTHIER, DAVID P. *Morals by agreement*. Oxford: Clarendon Press, 1986.
- GELLNER, ERNEST. *Nations and nationalism*. Ithaca: Cornell U. Press, 1983.
- GINTIS, HERBERT. "Education, Technology, and the Characteristics of Worker Productivity," *Amer. Econ. Rev.*, May 1971, 61(2), pp. 266-79.
- . "A Radical Analysis of Welfare Economics and Individual Development," *Quart. J. Econ.*, Nov 1972, 86(4), pp. 572-99.
- . "The Power to Switch: On the Political Economy of Consumer Sovereignty," in *Unconventional wisdom: Essays on economics in honor of John Kenneth Galbraith*. Eds.: SAMUEL BOWLES, RICHARD EDWARDS, AND WILLIAM G. SHEPHERD. Boston: Houghton Mifflin, 1989.
- GRAFEN, ALAN. "The Hawk-Dove Game Played Between Relatives," *Animal Behavior*, 1979, 27(3), pp. 905-07.
- GRANOVETTER, MARK. "Economic Action and Social Structure: The Problem of Embeddedness," *Amer. J. Sociology*, Nov. 1985, 91(3), pp. 481-510.
- GREIF, AVNER. "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies," *J. Polit. Econ.*, Oct. 1994, 102(5), pp. 912-50.
- GURIN, GERALD AND GURIN, PATRICIA. "Personal Efficacy and the Ideology of Individual Responsibility," in *Economic means for human needs*. Ed.: BURKHARD STRUMPEL. Ann Arbor: Institute for Social Research, 1976. pp. 131-57.
- GÜTH, WERNER; SCHMITTBERGER, ROLF AND SCHWARZE, BERND. "An Experimental Analysis of Ultimatum Bargaining," *J. Econ. Behav. Organ.*, Dec. 1982, 3(4), pp. 367-88.
- HAMILTON, W. D. "Innate Aptitudes of Man: an Approach from Evolutionary Genetics," in *Biosocial anthropology*. Ed.: ROBIN FOX. New York: John Wiley, 1975, pp. 115-32.
- HARSANYI, JOHN C. "Morality and the Theory of Rational Behavior," in *Utilitarianism and beyond*. Eds.: AMARTYA SEN AND BERNARD WILLIAMS. Cambridge: Cambridge U. Press, 1982, pp. 39-62.
- HAYEK, FRIEDRICH A. VON. *Individualism and economic order*. Chicago: U. of Chicago Press, 1948.
- HIRSCHMAN, ALBERT O. *The passions and the interests: Political arguments for capitalism before its triumph*. Princeton: Princeton U. Press, 1977.
- . "Rival Interpretations of Market Society: Civilizing, Destructive, or Feeble?" *J. Econ. Lit.*, Dec. 1982, 20(4), pp. 1463-84.
- . "Against Parsimony: Three Easy Ways of Complicating Some Categories of Economic Discourse," *Econ. Philos.*, Apr. 1985, 1(1), pp. 7-21.
- HOBBS, THOMAS. *De cive or The citizen*. New York: Appleton-Century-Crofts, Inc., 1949.
- HOFFMAN, ELIZABETH ET AL. "Preferences, Property Rights, and Anonymity in Bargaining Games," *Games Econ. Behav.*, Nov. 1994, 7(3), pp. 346-80.
- HOLLANDER, HEINZ. "A Social Exchange Approach to Voluntary Cooperation," *Amer. Econ. Rev.*, Dec. 1990, 80(5), pp. 1157-67.
- HOMANS, GEORGE C. "Social Behavior as Exchange," *Amer. J. Sociology*, May 1958, 63(6), pp. 597-606.
- HUME, DAVID. *Essays: Moral, political and literary*. London: Longmans, Green and Co., [1754] 1898.
- INTRILIGATOR, MICHAEL D. *Frontiers of quantitative economics*. Amsterdam: North-Holland Pub. Co., 1971.
- KACHELMEIER, STEVEN J. AND SHEHATA, MOHAMED. "Internal Auditing and Voluntary Cooperation in Firms: A Cross-cultural Experiment," *Accounting Review*, 1997, 72(3), pp. 407-31.
- KANT, IMMANUEL. *The philosophy of Kant: Immanuel Kant's moral and political writings*. Ed.: CARL J. FRIEDRICH. New York: Modern Library, [1785] 1949.
- KARASEK, ROBERT. "Job Socialization: A Longitudinal Study of Work, Political and Leisure Activity." Working Paper 59, Stockholm: Institute for Social Research, 1978.
- KARASEK, ROBERT AND THEORELL, TORES. *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books, 1990.
- KATZ, ELIHU AND LAZARSFELD, PAUL F. *Personal influence: The part played by people in the flow of mass communications*. Glencoe, IL: Free Press, 1955.
- KOHN, MELVIN L. *Class and conformity: A study in values*. Homewood, IL: Dorsey Press, 1969.
- . "Unresolved Issues in the Relationship Between Work and Personality," in *The nature of work: Sociological perspectives*. Eds.: KAI ERIKSON AND STEVEN PETER VALLAS. New Haven, CT: Yale U. Press, 1990, pp. 36-68.
- KOHN, MELVIN L. AND SCHOENBACH, CARRIE. "Class, Stratification, and Psychological Functioning," in MELVIN L. KOHN AND CARMi SCHOOLER 1983, pp. 154-89.
- KOHN, MELVIN L. AND SCHOOLER, CARMi. *Work and personality: An inquiry into the impact of social stratification*. Norwood: Ablex Pub. Corp., 1983.
- KOHN, MELVIN ET AL. "Position in the Class

- Structure and Psychological Functioning in the United States, Japan, and Poland," *Amer. J. Sociology*, Jan. 1990, 95(4), pp. 964–1008.
- KOLLOCK, PETER. "The Emergence of Exchange Structures: An Experimental Study of Uncertainty, Commitment, and Trust," *Amer. J. Sociology*, Sept. 1994, 100(2), pp. 313–45.
- . "Transforming Social Dilemmas: Group Identity and Cooperation," in *Modeling rational and moral agents*. Ed.: PETER DANIELSON. Oxford: Oxford U. Press, 1997.
- KRANTON, RACHEL E. "Reciprocal Exchange: A Self-Sustaining System," *Amer. Econ. Rev.*, Sept. 1996, 86(4), pp. 830–51.
- KREPS, DAVID M. "Corporate Culture and Economic Theory," in *Perspectives on positive political economy*. Eds.: JAMES E. ALT AND KENNETH A. SHEPSLE. Cambridge: Cambridge U. Press, 1990, pp. 90–143.
- LABOV, WILLIAM. *Sociolinguistic patterns*. Philadelphia: U. of Pennsylvania Press, 1972.
- . "De Facto Segregation of Black and White Vernaculars." Project on Linguistic Change and Variation, Linguistics Laboratory, U. of Pennsylvania, 1983.
- LAIBSON, DAVID. "A Cue-Theory of Consumption." Unpublished Paper, Harvard U. Department of Economics, 1996.
- LANE, ROBERT E. *The market experience*. Cambridge: Cambridge U. Press, 1991.
- LASLETT, PETER. *The world we have lost*. London: Methuen, 1965.
- LEDYARD, JOHN O. "Public Goods: A Survey of Experimental Research," in *The handbook of experimental economics*. Eds.: JOHN H. KAGEL AND ALVIN E. ROTH. Princeton, NJ: Princeton U. Press, 1995, pp. 111–94.
- LEIBENSTEIN, HARVEY. "Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand," *Quart. J. Econ.*, May 1950, 64, pp. 183–207.
- LEPPER, MARK R. AND GREENE, DAVID. *The hidden costs of reward: New perspectives on the psychology of human motivation*. Hillsdale: Lawrence Erlbaum Associates, 1978.
- LEPPER, MARK R.; GREENE, DAVID AND NISBETT, RICHARD E. "Undermining Children's Intrinsic Interest With Extrinsic Reward: A Test of the 'Overjustification' Hypothesis," *J. Personality and Social Psychology*, 1973, 28(1), pp. 129–37.
- LERNER, DANIEL. *The passing of traditional society: Modernizing the Middle East*. New York: Free Press, 1958.
- LEVINE, ROBERT A. *Dreams and deeds: Achievement motivation in Nigeria*. Chicago: U. of Chicago Press, 1966.
- . *Culture, behavior, and personality*. London: Hutchinson & Co., 1973.
- LOEWENSTEIN, GEORGE. "Out of Control: Visceral Influences on Behavior," *Organizational Behavior and Human Decision Processes*, 1996, 65, pp. 272–92.
- LOEWENSTEIN, GEORGE AND ISSACHAROFF, SAMUEL. "Source Dependence in the Valuation of Objects," *J. Behavioral Decision Making*, 1994, 7, pp. 157–68.
- MALINOWSKI, BRONISLAW. *Crime in savage society*. London: Routledge & Kegan Paul, 1926.
- MALLON, FLORENCIA E. *The defense of community in Peru's central highlands: Peasant struggle and capitalist transition 1860–1940*. Princeton, NJ: Princeton U. Press, 1983.
- MARX, KARL. *The eighteenth brumaire of Louis Bonaparte*. New York: International Publishers, [1852] 1963.
- MAUSS, MARCEL. *The gift: forms and functions of exchange in archaic societies*. New York: W. W. Norton, [1925] 1967.
- MCCAULEY, CLARK; ROZIN, PAUL AND SCHWARTZ, BARRY. "On the Origin and Nature of Preference and Values." Unpublished paper, Oct. 1994.
- MCCLELLAND, DAVID. *The achieving society*. Princeton, NJ: Van Nostrand, 1961.
- MEYER, PETER J. "Schooling and the Reproduction of the Social Division of Labor." Unpublished honors thesis, Harvard U., Mar. 1972.
- MORTIMER, JEYLAN T.; LORENCE, JON AND KUMKA, DONALD S. *Work, family, and personality: Transition to adulthood*. Norwood: Ablex Pub., 1986.
- MULLIGAN, CASEY B. *Parental priorities and economic inequality*. Chicago and London: U. of Chicago Press, 1997.
- NEWCOMB, THEODORE M. ET AL. *Persistence and change: Bennington College and its students after twenty-five years*. New York: John Wiley & Sons, Inc., 1967.
- NOWELL-SMITH, PATRICK H. *Ethics*. London: Penguin, 1954.
- OCHS, JACK AND ROTH, ALVIN E. "An Experimental Study of Sequential Bargaining," *Amer. Econ. Rev.*, June 1989, 79(3), pp. 355–84.
- OTTO, SARAH P.; CHRISTIANSEN, FREDDY B. AND FELDMAN, MARCUS W. "Genetic and Cultural Inheritance of Continuous Traits." Working Paper No. 0064. Morrison Institute for Population and Resource Studies, Stanford U., 1995.
- OUCHI, WILLIAM G. "Markets, Bureaucracies, and Clans," *Administrative Science Quarterly*, Mar. 1980, 25(1), pp. 129–41.
- PARSONS, TALCOTT. *The structure of social action: A study in social theory with special reference to a group of recent European writers*. 2nd ed. Glencoe, IL: Free Press, 1949.
- . "On the Concept of Political Power," 1967a in TALCOTT PARSONS, ed. 1967, pp. 297–354.
- , ed. *Sociological theory and modern society*. New York: Free Press, 1967.
- POLANYI, KARL. *The great transformation: The political and economic origins of our time*. Beacon Hill: Beacon Press, 1957.
- POLLAK, ROBERT A. "Interdependent Preferences," *Amer. Econ. Rev.*, June 1976, 66(3), pp. 309–20.

- POTTER, DAVID MORRIS. *People of plenty: Economic abundance and the American character*. Chicago: U. of Chicago Press, 1954.
- PLOMIN, ROBERT AND DANIELS, DENISE. "Why Are Children in the Same Family So Different from One Another?" *Behavioral and Brain Sciences*, 1987, 10, pp. 1-60.
- RADNER, ROY AND SCHOTTER, ANDREW. "The Sealed Bid Mechanism: An Experimental Study" *J. Econ. Theory*, June 1989, 48(1), pp. 179-220.
- ROGERS, EVERETT M. *Diffusion of innovations*. New York: Free Press, 1962.
- ROMER, PAUL. "Preferences, Promises and the Politics of Entitlement," in *Individual and social responsibility: Child care, education, medical care and long-term care in America*. Ed.: VICTOR FUCHS. Chicago: U. of Chicago Press, 1996, pp. 195-228.
- ROSE-ACKERMAN, SUSAN. "Gifts and Bribes" in *Economics, values and organization*. Eds.: AVNER BEN-NER AND LOUIS PUTTERMAN. Cambridge: Cambridge U. Press, 1997.
- ROSS, LEE AND NISBETT, RICHARD E. *The person and the situation*. Philadelphia, PA: Temple U. Press, 1991.
- ROTH, ALVIN E. "Bargaining Experiments," in *The handbook of experimental economics*. JOHN H. KAGEL AND ALVIN E. ROTH. Princeton, NJ: Princeton U. Press, 1995, pp. 253-346.
- ROTH, ALVIN E. ET AL. "Bargaining and Market Behavior in Jerusalem, Ljubljana, Pittsburgh, and Tokyo: An Experimental Study," *Amer. Econ. Rev.*, Dec. 1991, 81(5), pp. 1068-95.
- ROZIN, PAUL. "Family Resemblance in Food and Other Domains: The Family Paradox and the Role of Parental Congruence," *Appetite*, Apr. 1991, 16(2), pp. 93-102.
- ROZIN, PAUL AND NEMEROFF, CAROL. "The Laws of Sympathetic Magic: a Psychological Analysis of Similarity and Contagion," in *Cultural psychology: Essays on comparative human development*. Eds.: JAMES W. STIGLER, RICHARD A. SHWEDER AND GILBERT HERDT. Cambridge: Cambridge U. Press, 1990, pp. 205-32.
- ROZIN, PAUL AND VOLLMECKE, T. A. "Food Likes and Dislikes," *Ann. Rev. Nutrition*, 1986, 6, pp. 433-56.
- SAHLINS, MARSHALL P. *Stone age economics*. Chicago: Aldine Pub. Co., 1972.
- SCHOTTER, ANDREW; WEISS, AVI AND ZAPATER, INIGO. "Fairness and Survival in Ultimatum and Dictatorship Games," *J. Econ. Behav. Organ.*, Oct. 1996, 31(1), pp. 37-56.
- SCHULTZE, CHARLES L. *The public use of private interest*. Washington, DC: Brookings Institution, 1977.
- SCHUMPETER, JOSEPH A. *Capitalism, socialism and democracy*. 3rd ed. New York: Harper & Row, 1950.
- SEN, AMARTYA. "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory," *Philosophy and Public Affairs*, Summer 1977, 6(4), pp. 317-44.
- SHAPIRO, CARL. "Premiums for High Quality Products as Returns to Reputations," *Quart. J. Econ.*, Nov. 1983, 98(4), pp. 659-79.
- SHERIF, MUZAFER. "An Experimental Approach to the Study of Attitudes," *Sociometry*, July-Oct. 1937, 1, pp. 90-98.
- SIAMWALLA, AMMAR. "Farmers and Middlemen: Aspects of Agricultural Marketing in Thailand," *Economic Bulletin for Asia and the Pacific*, June 1978, 29(1), pp. 38-50.
- SIMMEL, GEORG. *The philosophy of money*. London and New York: Routledge, 1990.
- SIMON, HERBERT A. "A Formal Theory of the Employment Relationship," *Econometrica*, July 1951, 19, pp. 293-305.
- SOLOW, ROBERT M. *The labor market as a social institution*. Cambridge, MA: Basil Blackwell, 1990.
- STARR, CHAUNCEY. "Social Benefits versus. Technological Risk," *Science*, Sept. 19, 1969, 165, pp. 1232-38.
- STIGLER, GEORGE J. AND BECKER, GARY S. "De Gustibus Non Est Disputandum," *Amer. Econ. Rev.*, Mar. 1977, 67(2), pp. 76-90.
- SUNSTEIN, CASS R. "Endogenous Preferences, Environmental Law," *J. Legal Studies*, June 1993, 22(2), pp. 217-54.
- TAUSSIG, MICHAEL T. *The devil and commodity fetishism in South America*. Chapel Hill: U. of North Carolina Press, 1980.
- TAYLOR, MICHAEL. *Anarchy and cooperation*. Cambridge: Cambridge U. Press, 1976.
- . *The possibility of cooperation*. Cambridge: Cambridge U. Press, 1987.
- TITMUSS, RICHARD M. *The gift relationship: From human blood to social policy*. New York: Pantheon Books, 1971.
- TONNIES, FERDINAND. *Community & society*. New York: Harper & Row, 1963.
- TVERSKY, AMOS AND KAHNEMAN, DANIEL. "Rational Choice and the Framing of Decisions," *J. Bus.*, Oct. 1986, 59(4), pp. S251-78.
- UPTON, WILLIAM EDWARD III. "Altruism, Attribution, and Intrinsic Motivation in the Recruitment of Blood Donors." Doctoral dissertation, Cornell U., 1973, pp. 1-89.
- VEBLEN, THORSTEIN. *The theory of the leisure class*. New York: Modern Library, 1934.
- WEBER, MAX. *Economy and society: An outline of interpretive sociology*, Vols. I and II. Eds.: GUENTHER ROTH AND CLAUD WITTICH. Berkeley: U. of California Press, [1922] 1978.
- WHITING, BEATRICE B., ed. *Six cultures: Studies of child rearing*. New York: John Wiley and Sons, 1963.
- WHITING, BEATRICE B. AND WHITING, JOHN W. M. *Children of six cultures: A psycho-cultural analysis*. Cambridge, MA: Harvard U. Press, 1975.
- WILSON, DAVID SLOAN AND SOBER, ELLIOT.

- “Reintroducing Group Selection to the Human Behavioral Sciences,” *Behavioral and Brain Sciences*, 1994, 17, pp. 585–654.
- WITKIN, HERMAN A. AND BERRY, JOHN W. “Psychological Differentiation in Cross-Cultural Perspective,” *J. Cross-Cultural Psychology*, Mar. 1975, 6(1), pp. 4–87.
- ZAJONC, ROBERT B. “Attitudinal Effects of Mere Exposure,” *J. Personality and Social Psychology*. Monograph Supplement, June 1968, 9(2, Part 2), pp. 1–27.
- . “Feeling and Thinking: Preferences Need No Inferences,” *American Psychologist*, Feb. 1980, 35(2), pp. 151–75.
- ZELIZER, VIVIANA A. “Payments and Social Ties,” *Sociological Forum*, Sept. 1996, 11(3), pp. 481–95.
- ZUFFERY, F. S. “A Study of Local Institutions and Resource Management Inquiry in Eastern Central District.” Research paper no. 88, Land Tenure Center, U. of Wisconsin-Madison, Mar. 1986.