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Is Liberal Society a Parasite on Tradition?

I. INTRODUCTION

The parasitic liberalism thesis, advanced in many variants over the past two centuries, holds that the proper functioning of markets and other institutions endorsed by liberals depends on family-based, religious, and other traditional social norms that are endangered by these very institutions. Liberal society thus is said to fail Rawls's test of stability: it does not "generate its own supportive moral attitudes."[1]

Consistent with the thesis, market-like incentives are sometimes counterproductive, apparently because they displace preexisting ethical commitments in favor of a self-interested strategic mode of reasoning, as Richard Titmuss claimed is the case when monetary incentives are deployed to encourage blood donations.[2] Until recently, skeptics of the parasitic liberalism thesis could point to the paucity of hard evidence that market-like incentives compromise ethical motives. However, recent experimental studies show that while the "moral sentiments" underpinning the workings of markets and other institutions endorsed

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1. John Rawls, *A Theory of Justice* (Cambridge, Mass.: Harvard University Press, 1971), p. 399.

2. Richard M. Titmuss, *The Gift Relationship: From Human Blood to Social Policy* (New York: Pantheon Books, 1971).

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by liberals are common in most human populations,[3] the same experiments also indicated that incentives that appeal to material self-interest often undermine interpersonal trust, reciprocity, fairness, and public generosity.[4]

It is often countered that the corrosive effect of explicit economic incentives on these values is of little import because, by comparison to other allocation mechanisms (for example, gift exchange or central planning), markets function tolerably well in their absence. Friedrich Hayek, for example, holds that the liberal market economy "is a system under which bad men can do least harm. It . . . does not depend . . . on our finding good men for running it, or on all men becoming better than they now are."[5] Thus, it is sometimes said that markets economize on virtue, meaning that "market-like arrangements reduce the need for compassion, patriotism, brotherly love, and cultural solidarity."[6]

But the proper functioning of markets nonetheless depends critically on social and moral preferences.[7] For example, in the absence of a strong work ethic and feelings of reciprocity between employers and employees, an adequately functioning labor market would be impossible. If trust, truth telling, and other ethical behaviors were absent between borrowers and lenders, credit markets likewise would collapse. If the "markets economize on virtue" reasoning is correct, the same is true with even greater force of other institutions, so that "no social system can

3. Colin Camerer and Ernst Fehr, "Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists," in *Foundations of Human Sociality: Economic Experiments and Ethnographic Evidence from Fifteen Small-Scale Societies*, ed. Joseph Henrich et al. (Oxford: Oxford University Press, 2004).

4. Samuel Bowles, "Policies Designed for Self-Interested Citizens May Undermine 'the Moral Sentiments': Evidence from Experiments," *Science* 320 (2008): 5883; Samuel Bowles and Sandra Polanía Reyes, "Economic Incentives and Pro-social Behavior," *Santa Fe Institute* (2010).

5. Friedrich Hayek, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948), p. 11.

6. Charles L. Schultze, *The Public Use of Private Interest* (Washington, D.C.: Brookings Institution, 1977), p. 18.

7. Kenneth J. Arrow, "Political and Economic Evaluation of Social Effects and Externalities," in *Frontiers of Quantitative Economics*, ed. Michael D. Intriligator (Amsterdam: North Holland, 1971), pp. 3–23.

work . . . in which everyone is . . . guided by nothing except his own . . . utilitarian ends."[8]

If the self-interest-based incentives that are intrinsic to markets also degrade the other-regarding and ethical motives on which the functioning of markets and other institutions depend, does this moral crowding out then lead eventually to economic dysfunction, instability, and the collapse of liberal society? An affirmative response (for example, that "liberalism depends on virtues that it does not readily summon and which it may even stunt or stifle")[9] was famously advanced by Daniel Bell in his *Cultural Contradictions of Capitalism* and earlier works: "The historic justifications of bourgeois society—in the realms of religion and character—are gone. . . . The lack of a rooted moral belief system is the cultural contradiction of the society."[10] Prominent exponents of related themes include Edmund Burke, Alexis de Tocqueville, Joseph Schumpeter, Friedrich Hayek, and Jürgen Habermas.[11] (Some of the relevant passages appear in an appendix available at <http://www.santafe.edu/~bowles>.)

Figure 1 illustrates this causal structure of the parasitic liberalism thesis, illustrating liberal institutions' direct crowding-out effect on virtue as well as an indirect effect that occurs because liberal institutions are held to undermine religious, family, and other traditional institutions that would otherwise sustain these necessary virtues.

8. Joseph Schumpeter, "The March into Socialism," *American Economic Review* 40 (1950): 446–56, at p. 448.

9. Peter Berkowitz, *Virtue and the Making of Modern Liberalism* (Princeton, N.J.: Princeton University Press, 1999).

10. Daniel Bell, *The Coming of Post-Industrial Society: A Venture in Social Forecasting* (New York: Basic Books, 1973), p. 48; Daniel Bell, *The Cultural Contradictions of Capitalism* (New York: Basic Books, 1976).

11. Edmund Burke, *A Letter from Mr. Burke to a Member of the National Assembly in Answer to Some Objections to His Book on French Affairs* (London: Dodsley, Pall-Mall, 1791), and *Reflections on the Revolution in France* (New York: Macmillan, 1890; originally published in 1790), pp. 4–86; Alexis de Tocqueville, *Democracy in America* Vintage Classics (New York: Alfred A. Knopf, 1945): I, p. 12, II, pp. 208, 334–47, 339; Friedrich Hayek, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948); Karl Polyani, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, 1957), pp. 76–77, 177; Jürgen Habermas, *Legitimation Crisis* (Boston: Beacon Press, 1975), pp. 77, 79; Fred Hirsch, *Social Limits to Growth* (Cambridge, Mass.: Harvard University Press, 1976), pp. 117–18; Joseph Schumpeter, "The March into Socialism," *American Economic Review* 40 (1950): 446–56.

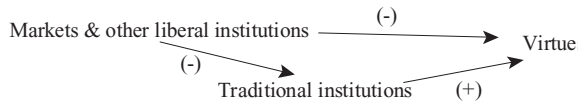

FIGURE 1. The Causal Structure of the Parasitic Liberalism Thesis. "Virtues" represent the individual social norms and ethical commitments that are necessary for the proper functioning of markets and other liberal institutions. Arrows labeled (+) indicate a positive causal impact (variations in the source of the arrow result in variations in the same direction in the target of the arrow). Arrows labeled (-) are negative causal effects

Surprisingly, as we will see, the "markets economize on virtue" response to the parasitic liberalism thesis not only fails to allay the concerns raised by these authors, but also contributes to the instability of liberal institutions. The reason is that in tandem with moral crowding out, the comparative advantage of markets over other institutions in governing interactions among self-interested actors may set in motion a spiral of market-induced erosion of other-regarding and ethical values, which in turn prompts greater reliance on markets, which in turn further erodes values, and so on.

The parasitic liberalism thesis is thus a claim about the mutual dependence of society-level institutions and individual preferences, and their joint dynamics in the very long run, a claim that ideally would be studied historically. To do this, one would track over the centuries the scope and functioning of markets and other institutions along with various measures of the civic culture and individual values. Data, however, do not permit such a study. But we are able to clarify the causal structure of the thesis using evolutionary game theory and test a key implication of the parasite thesis (i.e., that liberal societies would exhibit lesser levels of civic virtue) using recent experimental results from behavioral economics. That is what I will do in the pages that follow.

In the next section, I model the joint dynamics of institutional and cultural change, showing the conditions under which the cultural dynamic of liberal society would confirm the parasitic liberalism thesis. Then (in Section III), I present evidence that market-like incentives may crowd out ethical motivations, illustrating the parasitic liberalism thesis and the cultural and institutional processes by which it might work. The cross-cultural behavioral experiments presented in Section IV, however, cast doubt on the thesis: liberal societies are distinctive in their civic

cultures, exhibiting levels of generosity, fair-mindedness, and civic involvement that distinguish them from nonliberal societies.

My interpretation of these seemingly conflicting experimental results (Section V) is that the idealized view of tradition embodied in the parasitic liberalism thesis overlooks aspects of nonliberal social orders that are antithetical to a liberal civic culture. Thus, while markets and other liberal institutions may indeed undermine traditional institutions by attenuating familistic and other parochial norms and identities as claimed, the effect is to enhance rather than erode the values necessary for a well-functioning liberal order. And even if market incentives do crowd out values essential to the functioning of liberal institutions, these effects may be more than compensated by the cultural influence of nonmarket aspects of the liberal society such as the rule of law and social mobility, thereby sustaining the vibrant civic cultures observed in many liberal societies (Section VI). A schematic comparison of the parasitic liberalism thesis and my alternative explanation of the self-sustaining nature of liberal civic culture is in Figure 6.

When I refer to civic virtues, I mean those social norms, ethical commitments, and other-regarding preferences that facilitate the workings of the institutions advocated by liberals. Proponents of the parasitic liberalism thesis, of course, differ about which values are said to be essential in this regard, but the following are commonly held to be among the cultural foundations of a well-functioning liberal order: willingness to help others at a cost to oneself (voluntarily paying taxes and contributing to public goods, for example) and upholding social norms such as respect for private property, honesty, fair treatment, and political participation, even when these do not enhance one's material benefits.[12]

By liberal society, I mean one characterized by extensive reliance on markets to allocate economic goods and services, formal equality of political rights, the rule of law, public tolerance, and attenuated ascriptive barriers to mobility (in contrast to societies loosely termed "traditional" or more broadly "nonliberal"). In the empirical studies below, examples of liberal societies are Switzerland, Denmark, Australia, the United States, and the United Kingdom, while examples of nonliberal societies (lacking at least one of the above attributes of liberal societies)

12. John Stuart Mill, *Utilitarianism* (New York: Oxford University Press, 1998; originally published in 1861), chap. 3; Rawls, *Theory of Justice*, chap. 8.

are Saudi Arabia, Russia, Ukraine, and Oman as well as the small-scale societies of hunter-gatherers, herders, and low-technology farmers to be considered presently.

II. PARASITIC LIBERALISM

Hume's often-cited "constitution for knaves" and Kant's "universal laws" for a "nation of devils" notwithstanding, liberal political theorists have never suggested that virtue is dispensable for the institutions that they endorsed.[13] For J. S. Mill, the "principal of . . . [the] causes and conditions of good government . . . is the qualities of the human beings composing the society over which the government is exercised."[14] The parasitic liberalism thesis thus does not hold that liberals have ignored the moral underpinnings of their favored social order, but rather that they have provided insufficient reason to think that these necessary virtues will flourish in a liberal environment.

Careful study of the works often said to provide such an account (those of Locke, Mill, and Rawls, for example) does not allay this concern. The great merit of these three authors is that they addressed the problem of the cultural dynamics that might underpin the institutions they advocated. But neither Locke's appeal to a gentlemanly home schooling,[15] nor Mill's confidence that citizens in a liberal society will "spontaneously" adopt other-regarding preferences,[16] nor Rawls's belief that members of just associations will develop "bonds of friendship and trust" and through these "an attachment to the principles of justice"[17] provide reasons or evidence to think that these mechanisms entrusted with the perpetuation of liberal values would accomplish that end. In these and other works, either the mechanism whereby a liberal culture could be sustained is not explained, or the reader is given no empirical evidence

13. Immanuel Kant, "Perpetual Peace," in *Kant's Political Writings*, ed. Hans Reiss (Cambridge: Cambridge University Press, 1970; originally published in 1795), pp. 112–13; David Hume, *David Hume, The Philosophical Works* (London: Longmans, Green, and Co., 1898), pp. 116–17.

14. John Stuart Mill, *Considerations on Representative Government* (London: Longmans, Green, and Co., 1919), p. 11.

15. John Locke, *The Educational Writings of John Locke* (Cambridge: Cambridge University Press, 1968).

16. Mill, *Utilitarianism*, p. 77.

17. Rawls, *Theory of Justice*, pp. 461, 470.

that the mechanism in question is up to the task. Rawls, perhaps, provides an exception. Addressing the danger of commitments to liberty being eclipsed by antagonistic and competitive status seeking, he says that "social and economic differences" are "not likely to generate animosity" because "in a well-ordered society the need for status is met by the public recognition of just institutions, together with the full and diverse internal life of the many communities of interests that the equal liberties allow."[18] He offers no evidence that this would be so. But evidence about the relationship between generalized trust and liberal political institutions presented in the last two sections below may be consistent with Rawls's claim.

The main conceptual challenge in investigating the claim that the liberal social order is not self-reproducing but rather depends on the vanishing cultural vestiges of a preliberal tradition is that this requires an investigation of the joint dynamics of individual preferences and population-level institutions, one in which both institutions and individual preferences are endogenous, each providing conditions that influence the dynamics of the other. Modeling the evolution of institutions or of culture separately is difficult, and capturing the essentials of their joint evolution—the coevolution of institutions and culture—is doubly so.

The two components of such a model must be a representation of the way that institutions affect the evolution of culture and the way cultures affect the evolution of institutions.

The first, the idea that institutions affect culture, is commonly illustrated by the role of families and religious and educational organizations in the socialization process; but it extends to institutions less transparently associated with the evolution of norms, tastes, and the like, including economic institutions.[19] Supporting evidence comes from studies of parents' child-rearing values: parents value obedience more and independence less if at work they take rather than give orders.[20] Our cross-cultural experiments have also documented the influence of cooperative production (hunting large animals, for example, or the cooperative

18. Ibid., §82.

19. Samuel Bowles, "Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions," *Journal of Economic Literature* 36 (1998): 75–111.

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

provision of local public goods) on values supporting cooperating in other settings.[21]

With respect to the second component, the effect of culture on institutions arises because the kinds of preferences that are prevalent in a population will influence the comparative advantage of particular institutions. By institutions, I mean formal and informal rules governing social interactions, from the organization of families and firms to the structure of government. For example, where values such as reciprocity and fairness are prevalent, organizations based on partnerships may thrive, while in highly self-interested populations production may be carried out in organizations with close and punitive supervision.

Recently developed models of the coevolution of cultures and institutions allow a precise formalization of the parasitic liberalism thesis.[22] I simplify by representing institutions by a measure of the extent to which markets (as opposed to other institutions) allocate resources (m) while representing preferences by a single-valued measure of civic virtue (v), where the latter represents the prevalence of norms that contribute in essential ways to the functioning of liberal institutions. The objective of the model is to represent the mutual determination of m and v in order to characterize the pair or pairs $\{m, v\}$, such that both are unchanging when account is taken of the effects of each on the other. These so-called stationary pairs are termed cultural-institutional equilibria and they are subject to change only because of exogenous events. While obviously not representing the thinking of any particular variant of the parasitic liberalism thesis, the structure of the model captures two key ideas representing empirical claims about the nature of the two components mentioned above: institutions affect culture and culture affects institutions. (The following model is further explained in the appendix.)

The claim concerning the effect of institutions on culture is that markets crowd out virtues. This may occur by two mechanisms. In the first, preferences are endogenous: social interactions typical of a society

21. Joseph Henrich et al., eds., *Foundations of Human Sociality: Economic Experiments and Ethnographic Evidence in Fifteen Small-Scale Societies* (Oxford: Oxford University Press, 2004).

22. Samuel Bowles, *Microeconomics: Behavior, Institutions, and Evolution* (Princeton, N.J.: Princeton University Press, 2004); Marianna Belloc and Samuel Bowles, "International Trade and the Persistence of Cultural-Institutional Diversity," *Santa Fe Institute Working Paper 09-03-005*, 2010.

in which market institutions play a major role (and traditional institutions do not) favor a cultural learning process that is inimical to individuals acquiring and retaining the values needed for liberal institutions to function well. Proponents of the thesis have not specified the causal mechanisms by which this process might work, but it is not difficult to suggest a number of plausible candidates.[23] One is that traditional institutions such as the patriarchal family and religious organizations are the main locus of socialization in the values necessary for the liberal social order. The other is that markets themselves (as well as market-like incentives used by public bodies) reward self-interest and penalize those with other-regarding or ethical values.[24] An alternative mechanism whereby markets might crowd out virtues occurs when the market framing of a decision situation makes the pursuit of individual self-interest ethically permissible; and as markets become more extensive, this framing is extended to relations with family, neighbors, fellow citizens, and workmates. In this second mechanism, preferences are situation-dependent rather than endogenous, and markets provide a frame that tends to be generalized.

This "markets crowd out virtues" relationship is illustrated in panel A of Figure 2. In all four panels of this figure, each point is a cultural-institutional state characterized by the indicated level of market extent (institutions) and virtue (culture). Each point on the downward-sloping "markets crowd out virtue" function in panel A gives the equilibrium (that is, stationary) level of virtue that results from the indicated level of market extent and some given extent of traditional institutions (the arrows indicate that from points above the line, virtues tend to decline and conversely). For example, the culture of a society with market extent m' (for the given level of tradition) would be v'. We label this function $v = v(m; \tau(m^{-}))$, which restates the causal structure illustrated in Figure 1: virtue depends on both the extent of markets and of traditional institutions, where $\tau(m^{-})$ represents the inverse relationship of the current extent of traditional institutions and markets in the past. I will return to

23. Yoram Ben-Porath, "The F-Connection: Families, Friends, and Firms and the Organization of Exchange," *Population and Development Review* 6 (1980): 1–30.

24. Bowles, *Microeconomics*; Sung-Ha Hwang and Samuel Bowles, "The Sophisticated Planner's Dilemma: Optimal Fines and Subsidies When Incentives Affect Preferences," *Santa Fe Institute*, 2010.

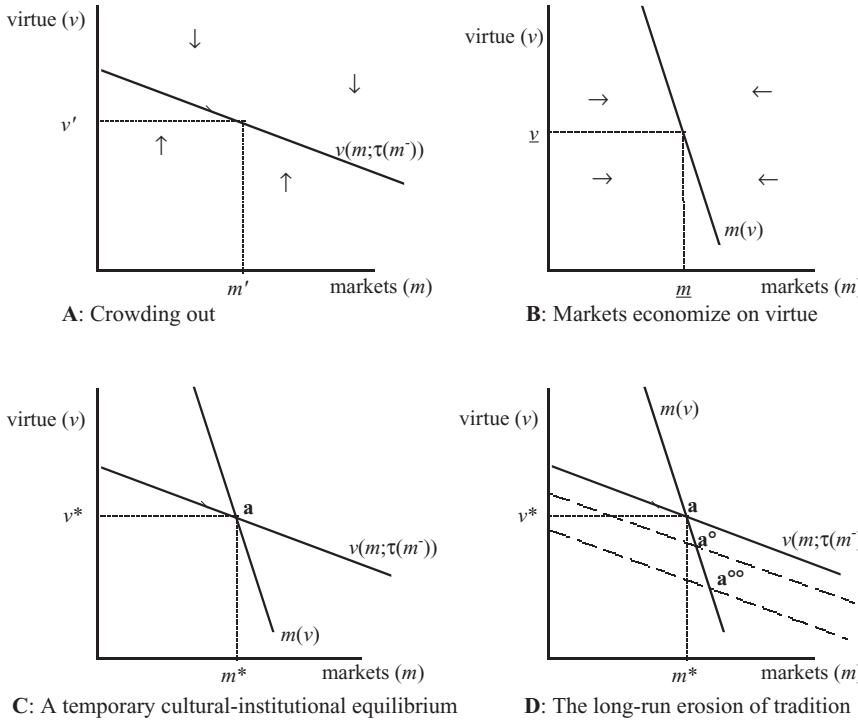

FIGURE 2. Parasitic Liberalism: A Temporary Cultural-institutional Equilibrium and the Long-term Effects of Market-induced Erosion of Tradition. Arrows in Panels A and B indicate the direction of adjustment. Panel A: The effect of the extent of markets on virtue. Panel B: The effect of virtue on the extent of markets. Panel C: A temporary cultural-institutional equilibrium (for a given extent of traditional institutions). The state $\{v^*, m^*\}$ indicated by point **a** is a cultural-institutional equilibrium that is also stable (a chance displacement away from **a** is self-correcting, as the arrows show). Panel D: The long-run effect of the induced demise of tradition and institutions on the equilibrium levels of both virtue and market extent. Dashed lines indicate the effect of the current extent of the market in subsequent periods, operating via the effect of markets on traditional institutions, displacing the cultural-institutional equilibrium to points **a°**, **a°°**, and so on.

the indirect effect of markets on virtues via the effect on traditional institutions presently.

The second key idea is an empirical claim about how culture affects institutions. It holds that because markets economize on virtue, they

will be more widely used in societies in which virtue is less prevalent. Put differently, markets have a comparative advantage (over other allocation mechanisms) where virtue is scarce. This claim is not part of the parasitic liberalism thesis per se (though it is advanced independently by Hayek), but is necessary to capture the downward cultural-institutional spiral that some of its proponents suggest. This spiral occurs because the extent of the market in allocating resources is determined in a decentralized way by the choices of countless economic agents and will vary with the cost advantages of markets relative to other institutions that may accomplish the same ends. Thus, whether firms produce or purchase a particular component of the product they produce, for example, depends on the supervision and other costs of the direct command relations that distinguish firms from markets and that are entailed by production of the component relative to the costs of search, bargaining over prices, and other costs of using the market.[25] The relative costs of the "build" versus "buy" options will depend on the ethical, self-interested, and other motives of those involved.

As a result, the level of virtues will influence the extent of the market; and because of the comparative advantage in governing interactions among entirely self-interested individuals enjoyed by markets (relative to bureaucracies, families, and other institutions), the relationship is inverse: higher levels of virtue being associated with a reduced extent of the market. This "markets economize on virtue" relationship is illustrated by the downward-sloping line in panel B of Figure 2. We label this function $m(v)$. Thus, for any given level of virtue (say, $\underline{v}$), there is an equilibrium extent of the market ($\underline{m}$) that is stationary, in the sense that no actor with the capacity to alter the extent of the market may benefit from doing so. As in panel A, the arrows indicate the direction of change out of equilibrium (that is, points off one or both of the functions), the extent of markets shrinking when they exceed the level indicated by the function and expanding when the reverse is true.

Because we want to know the conditions under which both culture and institutions will be stationary, we are interested in a state (that is, a $\{v, m\}$ pair) that is common to both functions, namely, the intersection of the two lines representing relationships labeled "markets crowd

25. Ronald H. Coase, "The Nature of the Firm," *Economica* 4 (1937): 386–405.

out virtue" and "markets economize on virtue." The joint influence of these two relationships shown in panel C of Figure 2 gives us the equilibrium level of virtue and extent of the market, namely, the pair $\{v^*, m^*\}$ where these represent what is termed a "temporary equilibrium," that is, one defined for a given extent of traditional institutions.

The long-term effects of markets on tradition and therefore on virtue are shown by the dashed lines in the final panel of Figure 2. Recall that the line $v = v(m; \tau(m^-))$—the crowding-out function—says that the level of virtue in any period depends inversely on the current extent of the market as well as on traditional institutions, which in turn depend (also inversely) on the extent of the market in the past. This captures the indirect effect of markets on virtues: the cumulated effects of markets undermine traditional institutions, and as a result the temporary equilibrium level of virtue for any given extent of the market deteriorates over time, leading to a downward drift in the crowding-out function. The result (in temporary equilibrium) is to increase the dependence on the market and diminish virtue, compromising institutional functioning and leading over time to the gradual displacement of the initial cultural-institutional temporary equilibrium (**a**) under the influence of the deleterious long-term effects of markets on tradition. Note that a downward shift in the function of a given magnitude results in an even larger downward displacement of the cultural-institutional equilibrium due to the reciprocal effects of the "markets economize on virtue" relationship and the resulting downward spiral.

The dynamic illustrated by panel D is a mathematical representation of the parasitic liberalism thesis, namely, the existence of a configuration of virtues and market extent that erodes tradition, leading to a displacement of the cultural-institutional equilibrium to one with lesser levels of civic virtue and greater reliance on markets and characterized by a reduced level of economic output. There is some evidence in its favor.

III. EXPERIMENTAL EVIDENCE: MARKET-LIKE INCENTIVES MAY CROWD OUT MORAL MOTIVES

Measuring values is notoriously difficult, and the cross-cultural empirical study of civic virtues presents additional challenges. Differences

across cultures in responses to widely used survey self-reports confound differences in the responders' preferences with differences in self-presentation concerns or in the objective situation of the respondent; moreover, they are sensitive to subtle differences in wording (which, due to language differences, are unavoidable in cross-cultural research). Consider, for example, the standard survey question said to measure an individual's level of trust: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" An individual, one with some given amount of underlying trust of others, would answer this question quite differently depending on where the individual lived. However, one may infer values indirectly from behavior in experiments involving real material stakes and in which the decision structure facing individuals is identical across cultures. The fact that experimental subjects play anonymously is also valuable, because the civic virtues in question are not confined to behavior toward family members and friends, but must extend to unknown fellow citizens. Here, I survey evidence from both natural and laboratory experiments consistent with the claim—integral to the parasitic liberalism thesis—that markets undermine ethical motivations. The experimental games referred to are listed in Table 1 along with the values that they indirectly measure.

In Haifa, at six randomly chosen day care centers, a fine was imposed on parents who were late in picking up their children at the end of the day (in a control group of centers, no fine was imposed). Parents responded to the fine with significantly greater tardiness: the fraction picking up their kids late more than doubled. When after sixteen weeks the fine was revoked, their enhanced tardiness persisted, showing no tendency to return to the status quo ante. Over the entire twenty weeks of the experiment, there were no changes in the degree of lateness at the day care centers in the control group. The counterproductive imposition of the fines illustrates crowding out: using a market mechanism (the fine) appears to have undermined the parents' sense of ethical obligation to avoid inconveniencing the teachers.[26] A total of forty-three further experiments to date illustrate the crowding out of ethical motives.[27]

26. Uri Gneezy, "The W Effect of Incentives," University of Chicago Graduate School of Business, 2003.

27. Bowles and Polanía Reyes, "Economic Incentives."

Table 1
Values Indirectly Measured in Experimental Games. The indicated values provide plausible explanations of experimental behavior when this differs from the behavior expected of an individual seeking to maximize game payoffs (and believing others to be doing the same). The second column gives the page numbers on which the structure of each game is explained.

Game	pp.	Values measured
Trust (with and without fines)	60	Investor: generosity or expectations of reciprocity. Trustee: reciprocity
Dictator	61	Unconditional generosity
Third-Party Punishment	61	Third party: willingness to pay to punish violations of fairness in the treatment of others
Ultimatum	63–64	Proposer: unconditional generosity or belief in the fair-mindedness of the respondent. Respondent: fairness, reciprocity
Public Goods with Punishment	65–66	Contributor: unconditional generosity or belief in the willingness of others to punish unfairness, shame when violating a social norm. Punisher: fairness, reciprocity

Interestingly, in ten experiments (including one by this author), crowding *in* is evident;[28] the extent of markets or the use of explicit economic incentives appears to have enhanced the salience or moral and other-regarding motives.

While these experiments are consistent with the parasitic liberalism thesis, better evidence would include a causal account of ethical crowding out that would indicate if it occurs because market-like

28. Joseph Henrich et al., *Foundations of Human Sociality.*

incentives reduce the motivational salience of traditional values sustained by institutions said to be endangered by liberalism. A laboratory experiment with a version of the Trust Game provides some clues. German students in the role of "investor" chose a costly action benefiting the other player, called the "trustee," who, knowing the investor's choice, could in turn provide a personally costly "back transfer," returning a benefit to the investor.[29] When the investor transferred money to the trustee, he or she also specified a desired level of the back transfer. The experimenters implemented an incentive condition in which the investor had the option of declaring that he would impose a fine if the trustee's back transfer were less than some declared amount. The investor could also decline the use of the fine, the choice of using or declining the fine option being taken prior to the trustee's decision. There was also a "trust" condition in which no such incentives were available to the investor. In the experiment, trustees reciprocated generous initial transfers by investors by responding with greater back transfers. But the use of the fine reduced return transfers conditional on the investor's transfer, while renouncing the use of the fine when it was available to the investor increased back transfers. Only one-third of the investors renounced the fine; their payoffs were 50 percent greater than the investors who threatened use of the fines. The use of the fine appears to have compromised the trustee's sense of reciprocity, while the renunciation of the fine enhanced it.

The proximate causes of the negative impact of incentives in this case are suggested by evidence on the neural responses of the trustees in a similar Trust Game.[30] As in the experiment of Fehr and Rockenbach, the investor's threat of sanctions negatively affected back transfers by trustees. To identify the proximate causes of this result, Li and his coauthors used functional magnetic resonance imaging (fMRI) to compare the activation of distinct brain regions of trustees when faced with both an investor who had threatened to sanction the trustee for insufficient back transfers and an investor who had not threatened a sanction. Threatened sanctions deactivated the ventromedial prefrontal cortex (a brain area

29. Ernst Fehr and Bettina Rockenbach, "Detrimental Effects of Sanctions on Human Altruism," *Nature* 422 (2003): 137–40.

30. Jian Li et al., "Neural Responses to Sanction Threats in Two-party Economic Exchange," *Proceedings of the National Academy of Science of the United States of America* 106 (2009): 16835–40.

correlated with higher back transfers in this experiment) as well as other areas relating to the processing of social rewards. The threat activated the parietal cortex, an area thought to be associated with cost-benefit analysis and other self-interested optimizing. The interpretation by Li and his coauthors is that the sanctions induced a "perception shift" favoring a more self-interested response.

More direct evidence on the causes of crowding out is provided by a large team of anthropologists and economists who implemented both Dictator and Third-Party Punishment Games in fifteen societies ranging from Amazonian, Arctic, and African hunter-gatherers to manufacturing workers in Ghana to undergraduates in the United States.[31] In the Dictator Game, an experimental subject (the dictator) is assigned an "endowment" of money by the experimenter and asked to allocate some, all, or none of it to a passive recipient. Then, the game ends (the recipient taking home the dictator's offer and the dictator taking home the rest). The Third-Party Punishment Game is a Dictator Game with an active onlooker (the third party) who observes the dictator's allocation. If the third party deems the dictator's allocation worthy of punishment, he or she may then pay (also from an endowment provided by the experimenter) to impose a monetary fine on the dictator. The game then ends: the dictator keeps the part of the endowment that was not allocated to the respondent minus the fine imposed by the third party (if any), while the respondent keeps the amount allocated by the dictator. The third-party "onlooker" keeps the initial endowment minus any amount spent fining the dictator.

The incentive provided by the presence of a third party should induce dictators to adjust their allocations upward (compared to the Dictator Game), the desire to avoid the material cost of the fine supplementing whatever generosity or fair-mindedness motivated the dictator to share with the recipient in the absence of this incentive. Surprisingly, in only two of the fifteen populations were the dictators' offers significantly higher in the Third-Party Punishment Game than in the Dictator Game, and in four of the populations the allocations were significantly (and in some cases substantially) lower. In Accra, for example, where 41 percent

31. Abigail Barr et al., "Homo Aequalis: A Cross-Society Experimental Analysis of Three Bargaining Games," Economic Series Working Paper 422, University of Oxford (2009); Henrich et al., "Markets, Religion, Community Size."

of the dictator's allocations resulted in fines by the third party, the allocations were 30 percent *lower* (t = –6.8) in the Third-Party Punishment Game than in the Dictator Game. The incentives provided by the prospect of a fine did not induce higher allocations, but rather had the opposite effect.

Experimental design typically does not provide sufficient information to allow investigation of the reasons why explicit incentives had the unintended effect. But in this case, we can say something about the underlying causal mechanisms. Crowding out of specifically ethical motives is suggested by the following comparison. Pooling the fifteen subject populations in the standard Dictator Game, the dictator's adherence to one of the world religions (Islam or Christianity, including Russian Orthodoxy) raised allocations by 23 percent (t = 3.5), compared to those unaffiliated with a world religion. But in the Third-Party Punishment Game with the very same individuals, this estimated "religion effect" was one-tenth as large and was not significantly different from zero. In the Accra sample, the dictator's allocation in the standard Dictator Game was strongly correlated with his or her frequency of attendance at church or mosque; but this "religion effect" vanished in the Third-Party Punishment Game. The presence of the incentive based on the fine appears to have defined the setting as one in which the moral teachings of these religions were not relevant. Tellingly, the self-reported economic circumstances of the dictator (reflecting his or her own need for income) did not predict offers in the standard Dictator Game, but were very salient (and statistically significant) in the Third-Party Punishment Game: economically needy dictators gave less. The presence of the economic incentive (the fine) apparently substituted economic interest for religious values. While far from adequate, there is thus some empirical evidence consistent with the main causal claim of the parasitic liberalism thesis that market-like incentives may crowd out ethical motivations.

IV. INDIVIDUALISM AND CIVIC VIRTUE

But the parasitic liberalism thesis does less well in a direct test: by most measures, liberal societies appear to have more flourishing civic cultures. As the result of three large cross-cultural behavioral experiments, we now have behavioral measures across a broad range of economic

and political systems concerning individuals' cooperativeness, fair-mindedness, and other predispositions commonly considered to be among the civic virtues. In addition to the Third-Party Punishment Game, Dictator Game, and Trust Game mentioned above, the Ultimatum Game and the Public Goods with Punishment Game (described below) also provide behavioral measures of generosity and willingness to sacrifice personal benefits to uphold fairness and other social norms and to contribute to a public good. These three studies provide evidence that these virtues flourish in liberal societies, though to varying degrees. The idea that preliberal tradition underpins the civic virtue essential to the functioning of liberal institutions finds little support in these data.

The cross-cultural data are sufficient to reject the key inference of the parasite thesis, namely, that liberal societies exhibit a scarcity of civic virtues in comparison to nonliberal societies. But they do not allow a test of the causal relationships accounting for the statistical patterns that I will presently report, for this would require cases in which differences in the extent of markets and other liberal institutions are exogenous with respect to the cultural norms under study, and it is difficult to imagine how such cases might be generated. It could well be, for example, that as the experiments presented above suggest, markets do crowd out virtue but that other liberal institutions more than compensate in sustaining a liberal civic culture. Indeed, this is precisely the alternative model that I will propose.

The most surprising evidence comes from the experimental Ultimatum Game played by subject pools in fifteen isolated small-scale societies (not the same fifteen as in the study just described).[32] In this game, subjects are anonymously paired for a single interaction. One is the "responder," the other the "proposer." The proposer is provisionally awarded an endowment ("the pie"), known to the responder, to be divided between proposer and responder. The proposer then offers a certain portion of the pie (including none) to the responder. If the responder accepts, the responder gets the proposed portion, the proposer keeps the rest, and the game is over. If the responder rejects the offer, both get nothing and the game is over. Entirely self-regarding proposers who believe that respondents are also self-regarding will anticipate that no positive offer will be rejected and so will offer the least

32. Henrich et al., *Foundations of Human Sociality*.

possible amount. But this rarely has been observed in literally hundreds of experiments in dozens of countries.

In our study of hunter-gatherers, herders, and low-technology farmers (horticulturalists), the groups with greater exposure to markets on average both made more generous offers as proposers in the Ultimatum Game and as respondents were more willing to reject low offers and as a result receive nothing rather than accept a highly unequal division of the pie. The two least market-exposed groups (the Tanzanian Hadza hunter-gatherers and Amazonian Quichua horticulturalists) offered a quarter and a third of the pie (respectively) in contrast to the highly market-integrated Indonesian Lamalera whale hunters, who offered on average more than half of the pie to the respondent. Considering all of the groups, a standard deviation difference in a measure of market exposure was associated with about half a standard deviation increase in the mean Ultimatum Game offer.

A second phase of this project studied primarily rural peoples in Africa, Oceania, and South America.[33] (This is the project that produced the evidence about the crowding out of religion in the Third-Party Punishment Game in Accra.) The correlation of Ultimatum Game offers and the extent of market exposure found in the first phase was reproduced in the second phase (of approximately the same magnitude), and a similar positive market correlation was found for offers in the Dictator Game and the Third-Party Punishment Game.

These results might surprise a proponent of the parasitic liberalism thesis because it appears here that markets induce a kind of generosity in the proposer or anticipation of fair-mindedness on the part of the respondent. But they are not inconsistent with the experimental evidence that I presented in the previous section in its support. The same Accra workers for whom monetary incentives apparently reduced the salience of religion and resulted in less generous behavior were among the most market-exposed in this study (they acquired all of their food by purchase) and also among the most generous, offering well above the average of the fifteen subject pools in the Dictator and Ultimatum games.

33. Joseph Henrich et al., "Costly Punishment Across Human Societies," *Science* 312 (2006): 1767–70; Henrich, "Markets, Religion, Community Size."

Unlike the first phase of this project, the second included one market-based liberal society: a rural population in Missouri (in the United States). We can gauge the Missourians' fair-mindedness in the Ultimatum Game by the minimum offer (i.e., the fraction of the pie) that they reported (at the outset of the game) that they would accept (this is also the amount the subject is willing to forgo in order not to accept an unfair offer). This so-called minimum acceptable offer (MAO) thus captures at once the subject's "willingness to pay" for fairness and the least advantageous division of the pie that the subject considers to be fair enough to not reject. The Missourians' MAO was the third highest among the fifteen subject pools. Controlling for subjects' age, sex, schooling, and average income, the Missourians, minimum acceptable offer was 2.6 times the average of the other groups and 2.4 times the MAO of the famously egalitarian Hadza hunter-gatherers.[34] In the Dictator Game, virtually all of the Missourians offered half the pie, making them the most generous of the populations (the Hadza subjects offered a quarter, on average).

More comprehensive evidence and (as we will see in the next section) an idea that may explain the empirical challenges to the parasitic liberalism thesis come from experiments with a usually diverse set of (also coincidentally fifteen) subject pools, including some from quintessentially liberal societies (United States, United Kingdom, Switzerland, Germany, Denmark, Australia) and others (Turkey, Russia, Saudi Arabia, China, Oman, South Korea). Cultural differences among these subject pools may be somewhat attenuated, however, because (unlike the previously mentioned field experiment studies) the subjects are university students.[35] The common experiment implemented (by the same experimenter) in these sites is a Public Goods with Punishment Game.

This is a modification of the Public Goods Game, an n-player prisoners' dilemma thought to capture the structure of many so-called social dilemmas (payment of taxes, participating in political activities, reducing one's environmental impact) in which individual and group interests conflict. The n-players are each awarded an endowment and given the opportunity anonymously to contribute some, all, or none of this to a

34. James Woodburn, "Egalitarian Societies," *Man* 17 (1982): 431–51.

35. Benedikt Herrmann et al., "Antisocial Punishment Across Societies," *Science* 319 (2008): 1362–67.

common pot (the public good), the amount of which (after all the contributions are made) is doubled or tripled and then distributed in equal parts to the players, irrespective of the amounts they contributed. This describes a public goods game if the group size and the multiplication factor is such that the individual maximizes payoffs by contributing nothing irrespective of what the others do, yet also such that total payoffs (summing over the group) are maximized if everyone contributes the entire endowment. (For example, if there are five members of the group and the multiplication factor is two, then by contributing one to the public pot a person would increase their payoff from the distribution of the common pot by two-fifths, which clearly does not justify foregoing the one; yet if everyone contributed one, then each would receive two.)

The punishment modification of this game is that after all players have made the allocation to the common pot, each is provided with information about the contributions of each of the other players (the identities are not given, just an ID number known only to the experimenter) and given the opportunity to pay (reduce one's own payoff) in order to reduce the payoff of any other member in the group. This procedure is followed on each of the rounds of the game (often ten).

This game provides information on three behavioral dispositions that may be considered to be civic virtues: willingness to contribute to a public good (public generosity) and to penalize those who do not (upholding social norms) both at a cost to oneself, and a positive response to punishment by others (shame at one's violation of a social norm). Where all three of these dispositions are present, contributions to the public good will be substantial.

As expected, cultural differences among the subject pools were significant, but in all of them (as was common with other experiments)[36] subjects contributed substantial amounts in the first period. But in the absence of the punishment option, in subsequent periods cooperation unraveled. However, as was expected from other experiments, when the punishment option was available it was widely used, especially in the early periods, and as a result the unraveling of contributions did not occur in any of the fifteen subject pools. In the experiment with punishment, the subject pools with the highest average contributions were

36. Ernst Fehr and Simon Gächter, "Cooperation and Punishment in Public Goods Experiments," *American Economic Review* 90 (2000): 980–94.

(in order) Boston, Copenhagen, St. Gallen (Switzerland), Zurich, and Nottingham; the lowest average contributions were in Athens, Riyadh, Muscat (Oman), Dnipropetrovs'k (Ukraine), and Samara (Russia).

Average contribution levels in the subject pools correlated positively with measures (for the populations from which the subjects were drawn) of the rule of law ($r = 0.53$), democracy ($r = 0.54$), individualism ($r = 0.58$), and social equality ($r = 0.65$). Positive correlations were also found, as expected, with survey measures of trust ($r = 0.38$).[37]

Individually costly voluntary contribution to a public good to be shared with strangers is surely a measure of the civic virtues upon which a liberal social order is said to depend. That these contributions are greater in nations characterized by individualism, rule of law, social equality, and democracy is puzzling, but whatever its explanation, it is not consistent with the parasitic liberalism thesis. Understanding why these correlations occur will cast further doubt on the thesis.

V. ORDER IN LIBERAL AND LINEAGE-SEGMENTED SOCIETIES

The difference between the cooperating and free-riding subject pools in the cross-cultural study just described is due to the use of punishment and the response to being punished. In the experiment without the punishment option, subjects in Samara, Dnipropetrovs'k, and Muscat contributed more than those in Boston, Nottingham, and Zurich. The reason why these subject pools did less well in the punishment version of the game is that a significant amount of punishment was directed not only at shirkers but also at high contributors. The latter may have occurred as a vendetta-like retaliation against punishment received in earlier rounds by subjects who believed that it was the high contributors who were doing most of the punishment (Figure 3). The authors termed punishment of those contributing the same or more than the subject "antisocial punishment." Other experiments have found the same patterns. The very high

37. These and the statistics reported below are calculated from data from Herrmann, Thoni, and Gächter and the other sources cited in the appendix. (Definitions of the measures and a table of their values are in Table 1A in the appendix.) Benedikt Herrmann et al., supporting online material for "Antisocial Punishment Across Societies," *Science* 319 (2008): 1362–67, DOI: 10.1126/science.1153808.

level of antisocial punishment in Athens is remarkable, but not surprising in view of these correlations: by these measures, Athens is very different from the top-contributing liberal locations and most similar to Seoul.

The extent of antisocial punishment was significantly and inversely correlated with the previously mentioned societal measures of the rule of law ($r = -0.53$), democracy ($r = -0.59$), individualism ($r = -0.63$), and social equality ($r = -0.72$). In the five high-contributing subject pools mentioned above, shirkers who were punished responded in subsequent

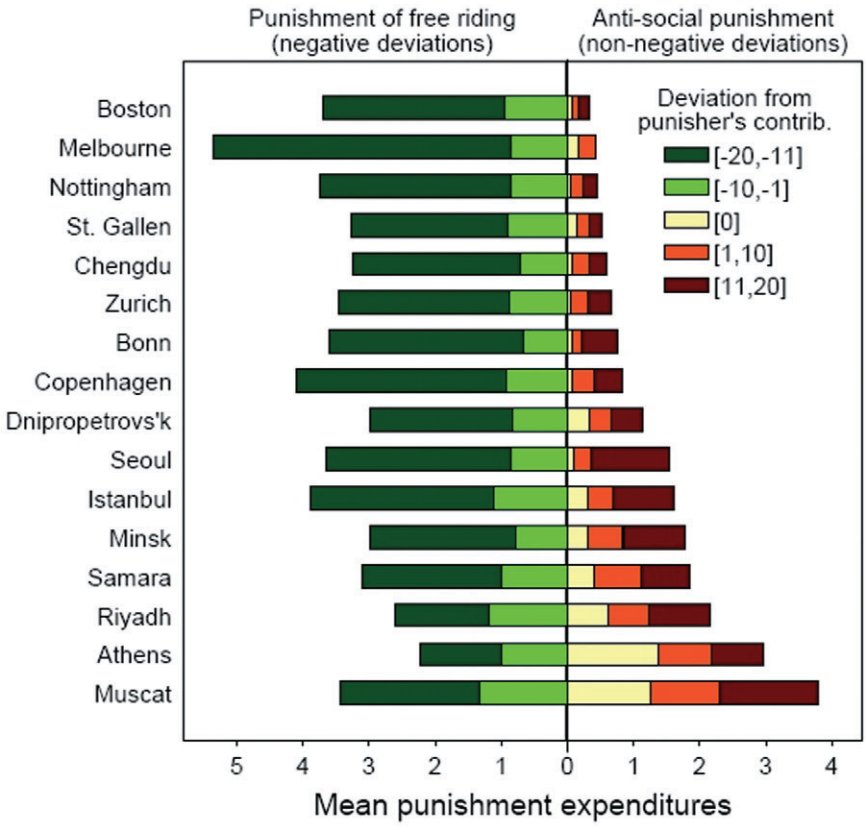

FIGURE 3. Antisocial Punishment in a Public Goods with Punishment Game. Bars to the left of zero indicate the extent of punishment of those who contributed less than the punisher. To the right are punishments targeted at those who contributed the same or more than the punisher

periods by significantly increasing their contributions. But in only one of the five low-contributing subject pools did shirkers respond positively to punishment (in four the response was not significantly different from zero).

A plausible explanation of the differing uses of punishment and the reactions of its targets is that punishment works only if it is regarded as legitimate, conveying the signal that the target has violated widely held norms. It appears that punishment of free riders, even by complete strangers, is legitimate and evokes shame, not anger, in Boston and Copenhagen but not in Muscat and Samara. The experimental exploration of the effect of legitimacy on the efficacy of punishment by Ertan, Page, and Putterman is consistent with this interpretation. Prior to playing the public goods game, each group of experimental subjects in Providence (in the United States) was invited to deliberate and to vote on whether punishment should be allowed and if it should be restricted in any manner. Here is what they found: "no group ever allowed punishment of high contributors, most groups eventually voted to allow punishment of low contributors, and the result was both high contributions and high efficiency levels."[38] Apparently, the determination of the punishment system by majority rule made the punishment of shirkers not only an incentive but also a signal of group disapproval.

This result suggests the following hypothesis to explain the contrasting levels of cooperation sustained by peer punishment in experiments with subject pools from liberal and other societies. Consider the structure of what anthropologists call a "lineage-segmented society." Lineages are the fundamental social unit, composed of families sharing a (perhaps quite distant) common ancestor and performing essential functions of risk pooling and redistribution. These segments are also responsible for the moral instruction and behavior of their members, and for the appropriate rectification of any transgressions toward members and nonmembers alike, including punishment and compensation where appropriate.[39] Punishment by a nonmember for a

38. Arhan Ertan et al., "Who to Punish? Individual Decisions and Majority Rule in Mitigating the Free-rider Problem," *European Economic Review* 3 (2009): 495–511.

39. Niloufer Qasim Mahdi, "Pukhtunwali: Ostracism and Honor Among Pathan Hill Tribes," *Ethnology and Sociobiology* 7 (1986): 295–304; Christopher Boehm, *Blood Revenge: The Enactment and Management of Conflict in Montenegro and Other Tribal Societies* (Lawrence: University Press of Kansas, 1984).

member's misbehavior may itself be considered a transgression, requiring rectification or inviting retaliation. Ernest Gellner's description of pastoralists as "a system of mutually trusting kinsmen" is an example. These are "strong, self-policing, self-defending, politically participating groups. . . . They defend themselves by means of indiscriminate retaliation against the group of any aggressor. Hence they also police themselves and their own members, for they do not wish to provoke retaliation."[40]

By contrast, in liberal societies the tasks of moral instruction and the maintenance of order are routinely entrusted to individuals who are unrelated and at least initially unknown to those whom they teach, police, and judge. Inverting the moral code of lineage-segmented societies, the legitimacy of these teachers and police and court officers is based on their anonymity and lack of relationship to those with whom they interact, enhanced by their uniforms, degrees, and official titles acquired (at least ideally) through a process of fair competition. Perhaps this explains why when Boston subjects who contributed less than the average in the public goods game were punished, they substantially increased their contributions, while under the same conditions subjects in Dnipropetrovs'k actually reduced theirs (though not by a significant amount). While the incentive to contribute more was no doubt salient in both cases, the signal may have differed. Boston subjects may have read the fine as disapproval by fellow citizens, while for those in Dnipropetrovs'k it was perhaps an insult.

This hypothesis has yet to be tested empirically; but if it were found to have merit, it would direct attention not to the cultural consequences of markets, but rather to liberal political, judicial, and other nonmarket institutions as the key to liberal civic culture.

VI. A LIBERAL CIVIC CULTURE

Liberal states have neither the information nor the coercive reach to eliminate opportunism and malfeasance, but they can protect citizens from worst-case outcomes, whether these be personal injury, loss of property, or other calamities. The result, writes Norbert Elias, is a

40. Ernest Gellner, "Trust, Cohesion, and the Social Order," in *Trust: Making and Breaking Cooperative Relations*, ed. Diego Gambetta (Oxford: Basil Blackwell, 1988), pp. 142–57, at pp. 144–45.

"civilizing process" based on the fact that "the threat which one person represents for another is subject to stricter control . . . everyday life is freer of sudden reversals of fortune [and] physical violence is confined to the barracks."[41] This attenuation of calamity is accomplished through the rule of law, occupational and other forms of mobility, and (in the past half century or so) by social insurance.

A result is to reduce the value of those familial and parochial ties on which lineage-segments and other traditional identities are based, thereby creating a cultural environment favorable to the evolution of more universal norms that apply to strangers as well as family and clan, which may favor a greater interest in participating in democratic political activities, such as signing petitions, or engaging in political demonstrations or boycotts. The strong inverse association between these just mentioned indicators of democratic practice and measures of the extent of one's obligation to respect and care for one's children and parents in a large sample of immigrants to Europe is consistent with this view.[42]

Not surprisingly, the emergence of the rule of law appears to be associated with a parallel shift from trust in kin and other particular individuals to generalized trust, consistent with Toshio Yamagishi's "emancipation theory of trust."[43] Tabellini, for example, shows that generalized (rather than familial) trust appears to thrive in countries with a long history of liberal political institutions.[44] This process appears to have been at work in the eleventh-century Mediterranean trading system, which witnessed the eclipse of familial, communal, and other parochial systems of so-called collectivist contract enforcement by more

41. Norbert Elias, *The Civilizing Process* (Oxford: Blackwell, 2000).

42. Alberto Alesina and Paola Giuliano, "Family Ties and Political Participation," *IZA* Discussion Paper Series, No. 4150 (Bonn, 2009).

43. Toshio Yamagishi, Karen S. Cook, and Motoki Watabe, "Uncertainty, Trust, and Commitment Formation in the U.S. and Japan," *American Journal of Sociology* 104 (1998): 165–94; Toshio Yamagishi and Midori Yamagishi, "Trust and Commitment in the United States and Japan," *Motivation and Emotion* 18 (1994): 129–66; John Ermisch and Diego Gambetta, "Do Strong Family Ties Inhibit Trust?" *Journal of Economic Behavior & Organization* 75 (2010): 365–76.

44. Guido Tabellini, "Institutions and Culture," *Journal of the European Economic Association* 6 (2008): 255–94.

universalistic state-based "individualist" systems.[45] Because markets also flourish under these conditions (especially the protection of individual property under the rule of law), market-based societies may exhibit high levels of civic culture.

The relationship of markets to liberal civic culture may not be entirely accidental, however, because a case can be made that the spread of markets did contribute to the emergence of representative states with limited executive powers (which, if the above argument is correct, favored the evolution of generalized trust), and to national systems of schooling by strangers, which Gellner termed "exo-socialization."[46] Indeed, Gellner argues convincingly that markets could regulate a division of labor at the national level only if the multiplicity of parochial traditional cultures were replaced by more universal values consistent with the extensive interaction with strangers in market environments. The national standardization of language and culture facilitated occupational and geographical mobility, rendering individuals' income-earning assets less specific to place and craft and thereby complementing the other literal and de facto forms of insurance provided by liberal institutions.[47]

The rule of law and other nonmarket aspects of liberal society that insure against worst-case outcomes not only undermine the value of familial and parochial loyalties, but they may also free people to act on their social preferences by assuring them that those who conform to moral norms will not be exploited by their self-interested fellow citizens. This is most probably the motivational mechanism underlying the few experiments in which material incentives and moral motives were complements rather than substitutes, the former enhancing the salience of the latter.

This crowding-in effect of the rule of law is evident among the Hokkaido University subjects who cooperated more in a public goods experiment when assured that others (but not themselves) would be

45. Avner Greif, "Cultural Beliefs and the Organization of Society: An Historical and Theoretical Reflection on Collectivist and Individualist Societies," *Journal of Political Economy* 102 (1994): 912–50.

46. Ernest Gellner, *Nations and Nationalism* (Ithaca, N.Y.: Cornell University Press, 1983).

47. Massimo D'Antoni and Ugo Pagano, "National Cultures and Social Protection as Alternative Insurance Devices," *Structural Change and Economic Dynamics* 13 (2002): 367–86.

punished if they did not contribute sufficiently, though this had no effect on the subjects' own material incentives.[48] Similar synergies occur in natural settings: social norms support observance of traffic regulations, but these may unravel in the absence of state-imposed sanctions on flagrant violations.

While this risk-reduction aspect of the liberal state affects the entire panoply of social interactions, I will illustrate it by the case of market exchange. Consider a population composed of a large number of people who interact in pairs to engage in an exchange in which they may either behave opportunistically (e.g., steal the other's goods) or exchange goods to their mutual benefit. Call these strategies "defect" and "cooperate," with payoffs describing an assurance game, as in the top payoff matrix in Figure 4. Expected payoffs for cooperators and defectors are π_C and π_D and they are both increasing in the probability (p) that one's partner is a cooperator as shown in the right panel of Figure 4.

The important feature of the payoff matrix is that a defector takes the goods of the cooperator, but at some cost, so that cooperating is the best response (maximizes one's payoffs) if one is paired with a known cooperator. Defecting is always the best response to a defector. Though mutual cooperation (and exchange) maximizes total payoffs (and, due to the symmetry of the game, also the individual payoffs for both individuals), a trader paired with an unknown stranger would defect in the absence of a reasonable assurance that the stranger is a cooperator.

What is the smallest value of p (the probability that one's partner is a cooperator) such that the expected payoff of cooperating exceeds that of defecting? We can see from Figure 4 that one would have to believe that this is the case with a probability not less than p^* (which given the payoffs in the top matrix and in the figure the solid lines is two-thirds) for cooperating to be the expected payoff-maximizing strategy. Where p^* is substantial and information about one's trading partner minimal, mutual defection results, replicating the common condition in most of human history, namely, that strangers represent dangers, not opportunities for mutual benefit. But if the liberal institutions that attenuate the worst-case outcomes are in force (that is, the lower payoff matrix), the cooperator whose partner defects now has a payoff of one rather

48. Mizuhu Shinada and Toshio Yamagishi, "Punishing Free Riders: Direct and Indirect Promotion of Cooperation," *Evolution and Human Behavior* 28 (2007): 330–39.

	C	D
Cooperate	4,4	0,3
Defect	3,0	2,2

	C	D
Cooperate	4,4	1,2
Defect	2,1	2,2

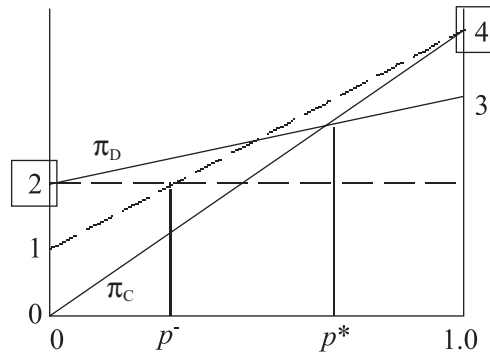

FIGURE 4. The Rule of Law and Cooperative Norms. Left panel: payoffs in the exchange game (upper without, lower with rule of law). Right panel: expected payoffs to a cooperator π_C and to a defector π_D, based on the type of one's partner (solid lines without, dashed lines with rule of law). The two Nash equilibria are mutual defect and mutual cooperate (shaded cells in the payoff table, boxed payoffs in the right panel). In a large, randomly paired population, p^* is termed the risk factor of the cooperative equilibrium, the robustness to instability of which is measured by $1\text{-}p^*$. Because, in the absence of the rule of law, the critical value, p^*, exceeds one half, defection maximizes the expected payoffs of an individual who believes that his or her partner is equally likely to cooperate or defect (defect is called the risk dominant strategy). The rule of law (dashed lines) makes cooperating the risk-dominant equilibrium, meaning the outcome in which each individual plays the risk-dominant strategy

than zero, and the defector's payoff in this case is reduced from three to two. The rule of law reduces the critical value of p to p^- (equal to one-third) so that a trader thinking that the partner is equally likely to be a cooperator or a defector would cooperate.[49] Thus, the rule of law could promote the spread of trusting expectations and hence of trusting behavior in a population.

49. Rawls provides a different mechanism for the case: "when it is dangerous to stick to the rules when others are not" (p. 336) "public institutions" may penalize defectors, thereby reducing their numbers, lowering the probability that a cooperator will be exploited by a defector, and so minimizing the appeal to the would-be cooperator of pre-emptive defection as a risk-minimizing strategy. But if public institutions are sufficient to deter defection directly, the result would be the same whatever the frequency of cooperative individuals in the population (John Rawls, *A Theory of Justice* [Cambridge, Mass.: Harvard University Press, 1971], p. 336).

VII. CONCLUSION

If the interpretation offered here can be sustained by more adequate empirical investigation, the parasitic liberalism thesis fails, not because it misunderstands the cultural consequences of markets or the tendency of liberal institutions to erode traditional institutions and cultures, but rather because it overrates the benign contribution of tradition to the moral underpinnings of liberal institutions, and underrates the contribution of the liberal state and other nonmarket aspects of liberal societies to the flourishing of these values.

If this reasoning and that of the previous sections is correct, then we need to revise the model of parasitic liberalism in Figure 2. Instead of tradition being essential to liberal institutions yet endangered by their functioning, we need to account for the cultural and institutional effects of the nonmarket aspects of the liberal social order. By defining and enforcing property rights, the rule of law may increase the scope of markets at a given level of virtue (shifting the "markets economize on virtue" function to the right, as shown in Figure 5). The effect, considered in isolation, would be to displace the cultural-institutional equilibrium from **a** to $\mathbf{a}^-$ and thus to reduce the equilibrium level of virtue.

But if my interpretation of the evidence is correct, there are two compensating cultural effects. First, the rule of law, exo-socialization, cultural standardization, and mobility enhance the level of virtue for any

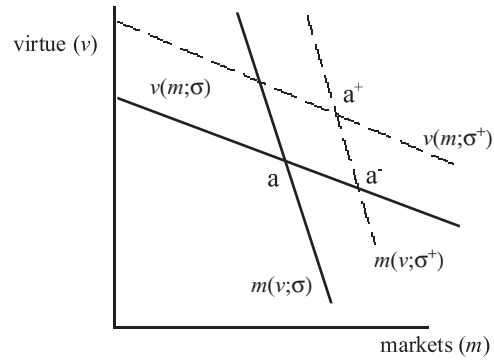

FIGURE 5. Markets, Liberal States, and Civic Virtue. The dashed lines indicate the effects of the liberal state (σ^+, see text). In the case shown, both v^* and m^* increase, but this need not be the case

level of markets (shifting the "markets crowd out virtue" function upward in Figure 5). Second, the fact that traditional institutions are undermined may, on balance, contribute to rather than undermine the values on which the functioning of liberal institutions depends, thereby augmenting the upward shift in the same function. The result is to displace the cultural-institutional equilibrium from **a** to $\mathbf{a}^{+}$ and to increase either or both the equilibrium level of virtue and the extent of markets.

A schematic summary of both the parasitic liberalism thesis and the alternative theory of the liberal civic culture appears in Figure 6.

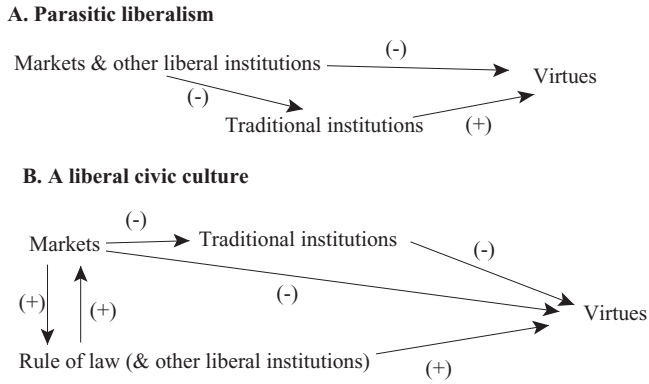

FIGURE 6. The Causal Structure of the Parasitic Liberalism Thesis and an Alternative. The top panel, the variable definitions, and the interpretation of the arrows are identical to Figure 1

This model, suitably extended, might account for the flourishing of civic culture found in some market-based societies. If true, on these grounds one would also expect that there would be lesser levels of civic virtue in the more market-oriented societies (meaning those with greater values of m for any given v) and those where the other liberal institutions that may offset the market crowding-out effects (the rule of law, exo-socialization, cultural standardization, and mobility) have a more limited reach. While not an adequate test, this hypothesis finds some support in the substantial levels of generalized trust in Sweden

compared to the United States[50] and in the decline in measures of trust and civic engagement in the United States and in contrast to continental Europe.[51] Indirect evidence consistent with the predicted inverse relationship between virtue and the extent of markets is found in the fact that the United States, perhaps the most market-based of the advanced economies, also excels in the fraction of its labor force devoted to what Jayadev and I call *guard labor*, namely, that devoted to (or the consequence of) maintaining order.[52]

While the parasitic liberalism thesis is thus not supported, the result is hardly an endorsement of laissez faire. Even under the idealized assumptions generally thought to be sufficient to vindicate unregulated markets (perfect competition and complete contracts in the exchange of all goods and services), the interaction of culture and institutions modeled here implies that once the joint dynamics of culture and institutions are taken into account, even these idealized conditions under which the Arrow-Debreu "invisible hand theorem" holds are insufficient to support the claim that all competitive equilibria are efficient (in the Pareto sense). Remarkably, this is true even if, given the prevailing values in the society, the decentralized decisions that result in the extent of the market (described in Section II) perfectly reflect the relevant trade-offs of using the market rather than alternative institutions so as to minimize the costs of doing business, in the manner described by Coase.[53]

The reason is that in devising institutional solutions for the governance of economic transactions and other social interactions, individuals do not take account of the influence of their choices on society-wide long-term cultural evolution. When markets crowd out the virtues that underpin effective governance, a decision to make greater use of the

50. Bo Rothstein and Eric Uslaner, "All for All: Equality, Corruption and Social Trust," *World Politics* 58 (2005): 41–72; Staffan Kumlin and Bo Rothstein, "Making and Breaking Social Capital: The Impact of Welfare State Institutions," *Comparative Political Studies* 38 (2005): 339–62.

51. Stefano Bartolini, *Did the Decline in Social Capital Depress Americans' Happiness?* (Siena: University of Siena, 2009); Francesco Sarracino, *Social Capital and Subjective Well-being Trends: Comparing 11 Western European Countries* (Firenze: University of Firenze, 2009).

52. Arjun Jayadev and Samuel Bowles, "Guard Labor," *Journal of Development Economics* 79 (2005): 328–48; Samuel Bowles and Arjun Jayadev, "Garrison America," *The Economists' Voice* 4, no. 2 (2007): article 3.

53. Ronald H. Coase, "The Nature of the Firm" *Economica* 4 (1937): 386–405; Ronald H. Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3 (1960): 1–44.

market thus generates a cultural analogue to an environmental spillover. As a result, given a status quo of idealized "surplus maximizing" Coasean institutional choice, there will exist some restriction of the scope of markets that will increase economic output (as conventionally measured). Note that this "cultural market failure" places no normative weight whatsoever on virtues per se; the market failure occurs because markets underprovide virtues that contribute to economic output, much as the private economy underprovides public goods such as basic scientific knowledge and environmental amenities.

APPENDIX I. THE MODEL

Multiple Cultural-institutional Equilibria and Cultural Collapse

The model in the text is an extension of work in Belloc and Bowles and Bowles (cited above in n. 22).

There is a stationary level of civic virtue expressed by the function $v = v(m; \tau(m^-))$, where m^- represents past values of m and τ represents the extent of traditional institutions with $v_m < 0$ and $v_\tau > 0$ (v_x. is the derivative of v with respect the variable x.) Thus when $v = v(m; \tau(m^-))$ the process of cultural updating is such that the level of virtue in the population does not change (i.e., is stationary, unless τ or m change). The $v(m; \tau(m^-))$ function is based on a process of cultural transmission in which an individual's values are periodically updated taking account of the relative payoffs of bearers of different values and the frequency of types in the population.

Likewise, the function $m(v)$ gives the stationary values of m for given values of v, based on individuals structuring their interactions with others (choosing among, say, contractual or friendship, or familial ways of interacting in some particular activity) based on the relative payoffs of these various structures.

The intersections of these two functions are temporary equilibria (J.-M. Grandmont, "Temporary Equilibrium," in *New Palgrave Dictionary of Economics*, ed. Lawrence Blume and Steven Durlauf [New York: Macmillan, 2008]).

Figure A1 illustrates a case in which two stable equilibria may exist, a result of the negative effect of markets on virtue being attenuated at both low and high levels of the extent of the market (so that the $v(m; \tau(m^-)$

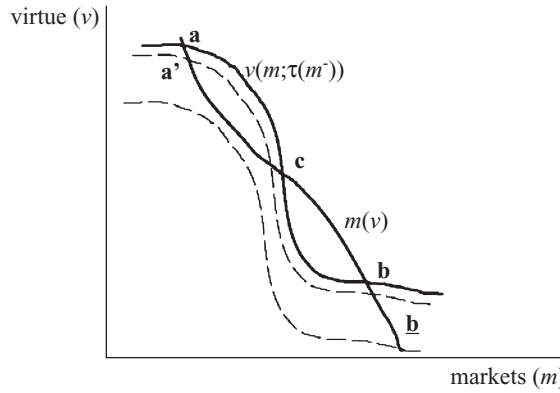

FIGURE A1. Multiple Cultural-institutional Equilibria with Punctuated-equilibrium Dynamics. This figure is similar to Panel D of Figure 1 in the text except that the functions are non-linear. States **a** and **b** are asymptotically stable (self-correcting), while **c** is unstable. The erosion of traditional institutions given by the lower dashed line eliminates the upper stable equilibrium (as well as the unstable equilibrium) so that the only temporary equilibrium is **b**

function is non-linear and is flatter for high or low m). In this case, for a society initially at the high virtue and limited market extent equilibrium (**a**) the effect of a modest downward shift in the values function resulting from the decay of tradition is to displace the cultural-institutional equilibrium to a nearby equilibrium (**a'**) with less virtue and more markets. A further decline in tradition, however, may eliminate the upper equilibrium entirely (the lower of the two dashed lines), inducing a precipitous collapse of virtue and increased market dependence resulting in a transition to **b**.

APPENDIX II. MEASURES OF INSTITUTIONAL AND CULTURAL DIFFERENCES

Definitions and Sources of Measures used in Sections IV and V

Rule of Law: This measures the extent to which people have confidence in and abide by the rules of society, in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. It is measured on a scale of –2.5 (being the weakest) to 2.5 (being the strongest). The data used are from the years 2002–2006. From the World Bank Worldwide Governance Indicators.

http://info.worldbank.org/governance/wgi/index.asp
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=999979

Democracy: The concept has been defined to measure: state of public corruption; current practice in human rights; political rights; free speech; and the overall state of the rule of law in 150 nations. The research, which was conducted by the World Audit, surveys 150 countries, and the measurements are updated each year (this article used the measures from the year 2008). The lower numbers signify a higher level of democracy and the high numbers a lower level of democracy as the World Audit defines it according to the above-stated measures. The reported correlations in the text are for the negative of the measure, so that 'democracy' varies positively with the democratic traits above.

http://www.worldaudit.org/publisher.htm

Social Inequality: This is the "power distance" measure that the Hofstedes define as a "dimension of national cultures. It reflects the range of answers found in various countries to the basic question of how to handle the fact that people are unequal. It derives its name from research by a Dutch experimental social psychologist, Mauk Mulder, into the emotional distance that separates subordinates from their bosses. Scores for 50 countries have been calculated." The indicator increases with the score.[54]

Individualism: Also from the Hofstedes, countries with low scores are considered collectivist countries, and high scores correspond with individualist societies: "Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetimes continue to protect them in exchange for unquestioning loyalty."[55]

54. Geert Hofstede and Gert Jan Hofstede, *Cultures and Organizations: Software of the Mind*, 2nd ed. (New York: McGraw-Hill, 2005), pp. 41–42.

55. Hofstede and Hofstede, *Cultures and Organizations*, pp. 75–76.

Table A1

Cultural-institutional measures. Antisocial punishment is the estimated dummy variable for the site in question (measuring the estimated difference between that subject pool's behavior and a predicted amount. Contribution (Cont.) is the average in the public goods with punishment experiment for the site indicated. Empty cells indicate absence of data (data on the controls in the estimating equation for Zurich were absent).

Site	Trust	Law	Dem	Ineq	Indiv	Antisoc P	Cont.
Boston	0.36	1.54	13	40	91	−8.117	18
Nottingham	0.29	1.72	10	35	89	−6.87	15
Copenhagen	0.67	1.94	2	18	74	−8.927	17.7
Bonn	0.38	1.73	11	35	67	−6.349	14.5
Zurich	0.37	1.96	5	26	69		16.2
St. Gallen	0.37	1.96	5	26	69	−5.876	16.7
Minsk	0.42	−1.23	137			−3.606	12.9
Dnipropetrovs'k	0.27	−0.74	129			−4.302	10.9
Samara	0.24	−0.88	119	93	39	−3.055	11.7
Athens	0.24	0.71	34	60	35	−2.38	5.7
Istanbul	0.16	0.02	69	66	37	−4.682	7.1
Riyadh	0.53	0.22	129	80	38	−3.273	6.9
Muscat		0.75	99			−0.486	9.9
Seoul	0.27	0.73	33	60	18	−4.634	14.7
Chengdu	0.55	−0.41	129	80	20	−6.004	13.9
Melbourne	0.4	1.79	8	36	90	−5.161	14.1