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The Revenge of Homo Economicus: Contested Exchange and the Revival of Political Economy

Samuel Bowles and Herbert Gintis

The strength of the neoclassical paradigm, generations of students have been told, lies in its hardheaded grounding in a general model of self-interested action. But recent developments in microeconomic theory have shown that the self-interested behavior underlying neoclassical theory is artificially truncated: it depicts a charmingly Victorian but utopian world in which conflicts abound but a handshake is a handshake. Studies of principal-agent analysis, the economics of information, radical political economy, mechanism design and transactions cost economics have all focused on the difficulties involved in policing and enforcing the actual process of market exchange.¹

Abandoning the Victorian world of neoclassical theory will redirect economists to an older conception of their profession: what once was called political economy. Adam Smith and Karl Marx alike knew that a handshake was not always a handshake. The broad compass of their political economy embraced not only the analysis of simple acts of exchange, but issues of opportunism, strategic action, changes in tastes, norms, and sentiments, collusion among agents, and reciprocity and altruism as well. Extending the rich insights of the older conception of political economy using the formal modelling techniques of the new challenges economic theorists today.

The formal codification of Smith's "invisible hand" in the economics of Leon Walras, and later in the general equilibrium models associated with Kenneth Arrow and Gerard Debreu, was the result of a progressive paring

¹See, for instance, Akerlof (1984), Bowles and Gintis (1990), Rebitzer (forthcoming), Stiglitz (1987), and Williamson (1985).

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away of what seemed extraneous or excessively complex. During the process, political economy became economics, and the analysis of the evolution of economic institutions fell to those operating on the periphery of the discipline. The resulting model of competitive equilibrium achieved a rigor and a simplicity that was at once its greatest appeal and the basis of many of the doubts now being raised concerning its descriptive adequacy and coherence. In the interest of generality, distinctions among markets and factors of production were obliterated in favor of an approach in which the capital market came to look just like the labor market or the shirt market. No less important, human actors with capacities and opportunities for both deception and strategic action were not recognizable. *Homo economicus* as Smith had known him had all but disappeared from the Arrow-Debreu model.

Adam Smith exemplified the liberal tradition in his lively concern with the self-interested pursuit of goals and its ramifications in economic theory. Leon Walras, by contrast, had defined the pure science to which he aspired as the study of relationships among *things*, not *people* and sought, with notable success, to eliminate human relationships from his purview. His device for accomplishing this, *Walras' fiction* as we call it, was the notion that interactions among economic agents might be represented *as if* they were relationships among inputs and outputs. Walras (1873 [1954], p. 225) wrote: "Assuming equilibrium, we may even go so far as to abstract from entrepreneurs and simply consider the productive services as being, in a certain sense, exchanged directly for one another..." He added (p. 71): "the pure theory of economics... resembles the physico-mathematical sciences in every respect."

Beginning in the 1970s, with some notable precursors, economists in a variety of fields reintroduced *homo economicus* to the profession. But as in the case of Martin Guerre's putative return to the village of his birth, many doubted that it was really the same person. The new economic man is not a Victorian gentleman: he is uncompromisingly thorough in pursuing objectives, and often he is less benign. Not satisfied with calculating marginal rates of substitution while shopping for groceries, he now optimizes while deciding how hard to work for his employer, how truthfully to transmit information to his exchange partners, and whether the benefits exceed the costs of defaulting on a loan. These troublesome activities of the new *homo economicus*, Oliver Williamson (1985, p. 51) notes, include "the full set of *ex ante* and *ex post* efforts to lie, cheat, steal, mislead, disguise, obfuscate, feign, distort and confuse." Williamson (1984, p. 198) refers to this phenomenon as "self-interest-seeking-with-guile." But the "with guile" is superfluous. Guile is included in the very concept of optimization, and is no less an example of sophisticated self-interest than buying cheap and selling dear.

Post-Walrasian approaches deploy the tools of constrained optimization. This continuity with traditional neoclassical economics has allowed the new models to be assimilated into the discipline with minor resistance. The literature simply dropped the untenable assumption that enforcement of contracts is

costless and perfect, and that information about what is being traded and about the actions of agents are costlessly observable (Stiglitz, 1987). But in the process it has become clear that the foundation of neoclassical economics, the Walrasian model as extended by Arrow and Debreu, is not premised on the fully rational optimizer, but rather on a stripped-down version thereof. By taking optimizing more seriously, post-Walrasian economics has inspired a revolution in economic thought fostering both new theoretical departures and alternative conceptions of the capitalist economy.

We will offer our own interpretation of this literature, focussing on the widely recognized fact that the terms arising from exchange are not generally enforceable at zero cost to the exchanging parties. Where some aspect of the good or service supplied is both valuable to the buyer and costly to provide, the absence of third-party enforcement of claims gives rise to endogenous enforcement strategies. We refer to this relationship as a “contested exchange” because, unlike the transactions of Walrasian economics, the benefit the parties derive from the transaction depends on their own capacities to enforce competing claims.² The lack of third-party enforcement often arises because of the problem of asymmetric information, as in the standard treatment of relations between principals and agents. But asymmetric information is not necessary for a contested exchange to arise, as the case of the enforcement of credit relations among nations in the absence of a world state illustrates. The Walrasian model is a limiting case of contested exchange that obtains either when endogenous enforcement costs are zero or when the exchanging parties have no conflicts of interest. Walras’ elimination of the problem of agency in the exchange relationship thus hinges on a denial of the need for built-in enforcement. We will first take up some of the less controversial implications of the contested exchange model.

Contested Exchange

Let us review the representation of exchange relationships in the textbook neoclassical model. James Buchanan (1975, p. 17) describes the anonymity of the market and the uncontested nature of claims in standard theory by references to “a roadside stand outside Blacksburg”:

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 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.

²The post-Walrasian literature generally refers to endogenous enforcement as the problem of finding optimal incentives under conditions of moral hazard and adverse selection.

Buchanan is correct. Personal identity is of no account where claims are costlessly enforceable. Armen Alchian and Harold Demsetz (1972, p. 777) capture a second characteristic of the Walrasian model: the absence of substantive hierarchy. They observe that the firm

has no power of *fiat*, no authority, no disciplinary action any different in the slightest degree from ordinary market contracting between any two people... [The firm] can fire or sue, just as I can fire my grocer by stopping purchases from him, or sue him for delivering faulty products.

Indeed, there is nothing in a Walrasian model suggesting that capital has power over labor. As Paul Samuelson (1957, p. 894) has noted, "in a perfectly competitive market it really doesn't matter who hires whom; so let labor hire capital." The result, expressed long ago by Joseph Schumpeter (1911, p. 21) is a decentralization of power to consumers: "The people who direct business firms only execute what is prescribed for them by wants... Individuals have influence only in so far as they are consumers..."

These views taken together imply an apolitical conception of the economy, in which the only power wielded by economic agents is purchasing power. Abba Lerner (1972, p. 259) has noted: "An economic transaction is a solved political problem. Economics has gained the title of queen of the social sciences by choosing *solved political problems* as its domain."

Through the lens of contested exchange, the economy looks considerably different.

First, markets are not just allocative, promoting movements to and along an exogenously defined production possibility frontier. Markets are also disciplinary institutions, providing mechanisms for altering the supplies of inputs and production functions alike and thus shifting the production possibility frontier. For example, the labor market not only allocates workers to jobs, it also provides an environment governing the regulation of the quality and pace of work (Gintis, 1976; Shapiro and Stiglitz, 1984; Bowles, 1985). Similarly, credit markets do more than allocate capital among borrowers. Because the promise to repay a loan is not enforceable by a third party (the borrower may be bankrupt or enjoy limited liability), credit markets also provide non-contractual mechanisms for the enforcement of prudent levels of risk (Stiglitz and Weiss, 1981). Similar observations apply to goods markets, in which consumers typically pay a price in excess of marginal cost, while their implicit threat to switch suppliers if dissatisfied induces firms to supply high quality products (Klein and Leffler, 1981; Gintis, 1989b).

If markets perform disciplinary as well as allocative functions, we might reasonably ask how good a job they do: under what conditions do markets provide efficient solutions to disciplinary problems arising from the contested nature of exchanges? As we will suggest, they operate quite imperfectly, and the competitive pressures favoring the emergence of more efficient mechanisms are themselves imperfect.

Second, the evolution of institutions responds to the changing tasks and techniques of enforcement no less than to the changing tastes, techniques of production, and demographic shifts stressed in standard economic theory. The early evolution of the factory system or the later growth of the bureaucratic structure of the modern corporation, to take two examples, probably had as much to do with their ability to regulate the pace and quality of work as with their efficiency in translating work inputs into production outputs (Marglin, 1974). The success of institutions depends on their effectiveness in enforcing claims, not simply on their allocative efficiency. Only by great coincidence then would institutional evolution be allocationally efficient.

Third, where pairs of agents engage in repeated transactions, the price and other terms of exchange often include a payment in excess of at least one agent's next best alternative. The result is what we term an *enforcement rent*. This rent arises because it is generally suboptimal for an agent facing an enforcement problem in the process of exchange to make an offer equivalent to the trading partner's next best alternative. Should such an offer be accepted, the partner will be indifferent to the continuation of the exchange, and there would thus be no means of using the threat to terminate the relationship to enforce the terms of exchange. Offering an exchange partner an enforcement rent, one using the threat of termination to ensure compliance, is what we term a contingent renewal strategy. Where contingent renewal is used, some agents receive competitively determined enforcement rents that typically are not dissipated through the rent-seeking behavior of identical agents, since a promise by an identical agent to perform as well for less attractive terms is not credible in the absence of an effective means of precommitment.

But if agents are not indifferent between their current transactions and the next best alternative, some other agents must be quantity constrained, unable to make the transactions they would prefer. Thus contingent renewal markets do not clear in equilibrium. Noncompetitive elements, such as interactions between small groups that arise when transaction-specific investments are necessary to support the exchange, may produce analogous results, but the nonclearing nature of contested exchange markets will result from the problem of endogenous enforcement alone.

In a contested exchange labor market, for example, rents persist in equilibrium and the market does not clear. The cost of job loss to the worker, which equals the value of the job to the worker less the expected value of the next best alternative, is an enforcement rent since the fear of losing it ensures a higher level of work intensity than the worker would perform in this absence.³ Even where collateral is required as a condition of borrowing, credit markets may also exhibit enforcement rents: some agents would like to borrow at the going interest rate but cannot secure a loan. Identical agents who have secured

³Labor market studies suggest that the cost of job loss is a substantial fraction of workers' incomes, and that employment rents contribute significantly to the explanation of such aspects of worker behavior as work intensity (Schor, 1988), strike incidence (Schor and Bowles, 1987), and productivity (Gordon, Weisskopf and Bowles, 1983; Rebitzer, 1987; Green and Weisskopf, 1990).

an ongoing credit relationship with a financial institution receive enforcement rents, which generally make the termination of the relationship a credible threat in the hands of the lender. It is this threat that induces borrower compliance with lender wishes. Even where an agent is indifferent to entering the exchange there may be costs to being terminated, particularly where reputation effects or transaction specific investments are important.

Fourth, because contested exchange markets perform both claim enforcement and allocational functions, they generally fail to implement socially efficient resource use, in the sense that there exist transactions that are Pareto superior to the competitive equilibrium. In the labor case this is obvious, since a non-clearing labor market involves involuntary unemployment. By analogous reasoning, the credit constraint that arises from the competitive optimizing behavior of individual borrowers and lenders is socially inefficient. In equilibrium, projects remain unfunded despite the fact that their expected returns exceed the equilibrium interest rate. Since it is plausible to suppose that the interest rate equals savers' rate of time preference, the *prima facie* case for socially suboptimal investment is clear: the marginal rate of return to investment exceeds the private (and *a fortiori* the social) rate of time preference.

Fifth, the disciplinary function of markets operates through the exercise of power. While the concept of power is far from settled in political theory, we can offer a relatively uncontroversial sufficient condition for the exercise of power, namely, the ability of furthering one's interests by imposing (or credibly threatening to impose) sanctions on another agent when the converse is not also true (Bowles and Gintis, 1993b). Asymmetrical and credible sanctioning power in the above sense is often present in contested exchanges: the threat of dismissal and the termination of a credit relationship being examples. Contested exchanges thus have an essentially political aspect, and mechanisms designed to enforce claims through monitoring and sanctioning are political structures in the everyday sense that they govern the exercise of power.

But can power be exercised in a relationship voluntarily entered into by all parties? Surprisingly, the answer is yes. In the cases mentioned above, the worker and the borrower have chosen to do business with the employer and the lender, but the employer or the lender have power over the worker or the borrower. Power is exercised by the employer or lender in their own interest, but the employee and borrower are better off being subjected to this power than doing without the exchange altogether (if they were not, the threat of termination would be hollow). Joan Robinson said it best: "The only thing worse than being exploited by a capitalist is to be exploited by no one at all."

Sixth, contested exchange involves strategic behavior in personal interactions, rather than the anonymous interaction and agreed-upon rights of Buchanan's roadside stand. Strategic behavior differs from behavior in the Walrasian model in that each agent acts on the recognition that personal benefit depends not only on personal actions, but also on those of other parties to the exchange. In a world of contested exchange, it is often cost-reducing to

forgo the flexibility of spot contracting and to secure long-term commitments from one's trading partners (Rebitzer, 1987), so the identity of one's exchange partner matters. The paradigmatic form of economic action is not an agent intervening in a given external world, like the behavior of a price-taking firm or consumer, but rather an interaction among two or more agents, mutually aware of the reciprocal effects of their behavior. These durable exchange relationships have a face-to-face quality involving sufficiently few actors that the reciprocal effects of one's actions must be taken into account in selecting a strategy.

Seventh, while the assumption of exogenous preferences strains credulity in the Walrasian model, it is simply incoherent in a model of contested exchange. Unlike the Walrasian model, where agents are "endowed" with preferences that they then take to market, contested exchanges shape the character and consciousness of the exchanging agents. Because Walrasian exchanges are evanescent and externally enforced, they provide neither the opportunity nor the motive for attempting to shape the attitudes, norms, or values of one's exchange partners. Where enforcement is endogenous, by contrast, the value of the exchange depends on the commitments of the parties to the exchange. Because the exchange is durable and personal, the exchanging parties have an interest in shaping the structure of the transaction to mold the personalities, objectives, and other characteristics of the other parties to the exchange, and at least one has the capacity to do so. Thus for example, high wages or job security may be offered to foster good will, or *de facto* racial or gender distinctions may be used in hiring to forestall solidarity among one's employees.

The anthropologist Marshall Sahlins (1972, p. 186) writes: "if friends make gifts, gifts also make friends." The same can be said of exchanges: agents make exchanges, but exchanges also make agents. The learning component of the exchange process has important ramifications. Because what is learned is not easily unlearned, exchange equilibria have many characteristics typical of path dependent evolutionary processes: the deals that can be struck today depend on the deals struck in the past.

Of course, these seven results are far from exhaustive. But they are suggestive of the radical shift in focus fostered by the post-Walrasian approach.

The Capitalist Economy as an Arena of Contested Exchange

Once attention is given to the problem of enforcing claims in exchange, a complex vision of competitive capitalism emerges. The mix of markets and hierarchies characteristic of a capitalist economy, in addition to solving problems of allocation, serves as a system of enforcement and an environment conditioning the evolution of norms, preferences and beliefs. However

impressive the evolutionary viability of capitalism as a system, it cannot be defended on the allocative efficiency grounds suggested by the Walrasian model.⁴

This perspective on capitalism as, among other things, a political system associated with the enforcement of competing distributional interests, may be formalized in the following six propositions (Bowles and Gintis, 1990).

Proposition 1: Short-side Power. The general competitive equilibrium of a system of contested exchanges allocates power to agents on the short sides of non-clearing markets.

A sufficient condition for the exercise of power, the reader will recall, is the ability to further one's interests by credibly threatening to impose sanctions on another agent when the converse is not also true. The short side of a market is the side for which the quantity of desired transactions is the least. Short-side agents include employers in labor markets with equilibrium unemployment, owners in the market for managerial services in which the threat of dismissal is used to control managerial behavior, or lenders in capital markets with equilibrium credit rationing. Agents in a contested exchange market are generally of three types: short-side transactors, long-side transactors and long-siders who fail to make a transaction (the unemployed, aspiring managers, those rationed out of capital markets).

The model underlying Proposition 1 may be summarized as follows. Agent A exchanges money for the services of Agent B. B's services are of variable quality. Quality is valuable to A, costly for B to provide, and not fully subject to third-party enforcement. A renews the contract with B in each period if satisfied, where the probability of satisfaction increases with quality supplied. Other agents identical to B may also provide the service, and know enough about A's dealings with B to form an opinion of A as a buyer. Both agents know B's production function, each other's objective functions, and the conditions governing the termination of the contract. For any price offered by A, B selects a level of quality to maximize the present value of the relationship, trading off the cost of providing high quality against the cost of losing the relationship. A then chooses a price to maximize utility, taking into account the fact that quality increases with price. In equilibrium, other agents identical to B will fail to secure a transaction. Thus A is a short-sider, B is a long-sider, and A has power over B.

In this sense, short-side agents have power over the long-side agents with whom they transact, since they may at little or no cost to themselves impose significant sanctions by terminating the contract. Short-side agents may then use this power to ensure that their long-side partners act according to short-side

⁴Stiglitz (1987) observes that in models involving moral hazard and adverse selection, the separation of issues of allocation and distribution guaranteed by the Fundamental Theorem of Welfare Economics is not maintained.

interests. Long-siders who make transactions may also be quantity constrained, of course, wishing to transact more at the going terms but being unable to do so.

It is conceivable, of course, that contracts and monitoring systems might be designed to render A's claims on B enforceable by a third party, and a number of ingenious proposals along these lines have been made. But in a world of asymmetric information and credit-constrained agents, optimal contracting of this type cannot replace systems of endogenous enforcement.

Proposition 1 recognizes enforcement problems only on one side of the exchange. It thus abstracts from the problem of bilateral endogenous enforcement, in which *both* parties hold transaction-specific assets, and for this reason contract termination is costly to *both* parties. While Williamson (1985), Aoki (1984) and others are surely correct to stress the ubiquitous nature of transactions-specific investments that give rise to the sharing of what Aoki terms "organizational rents," we believe that in dealing with employer-employee contested exchanges, the implication of symmetry in the relationship between the two agents is misleading. This is not to say that workers are abject servants of their employers. Nor is it to say that when workers act collectively, they cannot have such power.

A sufficient condition for this asymmetry in the position of worker is that a single employer hires many employees, while each employee is hired by only one employer. For the employee, quitting may impose training and search costs on the employer, but exercising this option also imposes costs on the worker while offering no benefits, and hence is not generally a credible threat. For the employer, however, the dismissal reinforces the credibility of the firm's incentive system in the eyes of other employees, thus offsetting the search and training costs involved in replacing a terminated worker. When these reputation effects of carrying out a termination outweigh the associated search costs, the employer's threat of dismissal is credible. Moreover the costs to the worker are often substantial: a terminated worker experiences a significant reduction in living standards, in the U.S. in recent years on the order of 25 to 50 percent in the year following termination (Schor and Bowles, 1987; Bowles, 1989).

The application of the notion of short-side power is particularly dramatic in the case of consumer goods markets. It is ironic that only in the context of post-Walrasian theory can the true value of consumer sovereignty be understood. Traditional microeconomic theory, reducing consumer sovereignty to allocational efficiency, has never captured the true value of market competition to the buyer: the position of power and dignity afforded the consumer who holds a short-side position vis-a-vis the firms that compete for that consumer's favor. The importance of the typical agent's short-side position on consumer goods markets and long-side position on credit and labor markets in capitalist society is nicely contrasted with the reverse, often found in centrally planned economies with soft budget constraints. In these economies it is typically consumers who are quantity constrained. In capitalist economies people wait in line for jobs, while in planned economies they wait in line for refrigerators.

Proposition 2: Inefficient Enforcement. Cost-minimizing contingent renewal enforcement strategies are inefficient.

Contingent renewal enforcement strategies involve two components: resource-using monitoring inputs such as surveillance personnel and equipment, and non-resource-using distributive payments, such as enforcement rents. Both are costly to the enforcer, but only the monitoring inputs have social opportunity costs, since the rent represents a transfer of claims, not the use of scarce resources. Thus, the private cost to the enforcer diverges from the true scarcity cost to society. As a result, contingent renewal enforcement strategies typically deviate from the social optimum by employing excessive monitoring and suboptimal rents, or roughly, not enough carrot and too much stick. For this reason, starting from a cost-minimizing enforcement strategy, an increase in the rent accompanied by a suitably chosen decrease in monitoring inputs will leave the level of services delivered unaffected while reducing the level of resource use. This demonstrates the technical inefficiency of competitively determined enforcement strategies. An example follows.

Proposition 3: Inefficient Property Rights. The employment relationship of the capitalist firm is inefficient, in the sense that a redistribution to the workers of ownership of the firm and control over enforcement strategies generally permits compensation of the former owners while making the workers better off.

Pareto improvements are possible because work effort does not have a price. Therefore, except under implausible conditions, the equilibrium enforcement strategy selected by the profit-maximizing employer does not equate the marginal rate of transformation of effort into income with the marginal rate of substitution between effort and income in the worker's objective function.⁵ The wage is regarded by the employer as a costly instrument of enforcement (since the enforcement rent, the cost of job loss, depends on it) while for the workers a wage is both an effort-enforcement instrument and a positively valued argument in the objective function. Since employers see wages as costly, they will tend to set them too low. Since workers tend to see both dimensions of enforcement and benefit from wages, they are in a position to make a more efficient choice, even if they are no less prone to free ride against a worker cooperative than against a capitalist firm.

The market failure associated with the capitalist employment relationship is sufficiently general as to arise in any reasonable model. The proposition does not depend on the size of the work team and is valid even when we assume

⁵The "implausible condition" is optimal bonding (Carmichael, 1985), in which the employer charges a new employee an up-front fee that renders the worker indifferent between taking the job and remaining unemployed. With optimal bonding the employment relationship in the capitalist firm is efficient (Bowles and Gintis, 1989). However, there is no evidence of the extensive use of such bonds and the notion that workers are indifferent to gaining employment is not reasonable. The absence of optimal bonding has been attributed to capital market imperfections and the moral hazard problems such payment schemes engender. We question the adequacy of these explanations, but we doubt that more than a small fraction of the worker's gain from obtaining a job involving employment rents is transferred in advance to the employer.

(conservatively, we think) that workers are no less inclined to free ride on their fellow workers than on their former employer.⁶ For the argument is not that making workers residual claimants will give them a greater incentive to work, but rather that workers will choose a wage rate that correctly measures the worker's marginal rate of substitution between goods and effort. Additionally, placing workers in control of the monitoring structure, in addition to changing their status from fixed to residual claimants, provides a powerful incentive for them to cooperate with the monitoring system in enforcing a high level of effort by one's fellow workers, and may take advantage of the private information held by workers about the work activities of their workmates.

The possibility of Pareto-improving redistributions of residual claimancy demonstrates in yet another way that efficiency and distribution cannot be separated. Where endogenous enforcement obtains, contrary both to the Fundamental Theorem of Welfare Economics and the Coase theorem, the distribution of property and income has efficiency effects, and some distributions are preferable to others purely on efficiency grounds.⁷

Proposition 4: The Concentration of Power in Competitive Markets. The survival of hierarchical over polyarchival or democratic firms may be explained by their efficacy in enforcing distributional claims, and does not require their efficiency in allocating resources.

Proposition 4 follows from Proposition 3, along with the claim that competitive markets favor the survival of hierarchical capitalist firms. But why is this latter claim correct? In the contested exchanges of capital markets, all but the wealthiest agents are credit-constrained to some degree, a consequence being that the Pareto-improving redistributions of Proposition 3 will not be implemented spontaneously by the process of market competition, but rather will require a public policy intervention. If workers faced no credit constraint they could buy out their former employer, adopt a new enforcement strategy, and improve their welfare; but facing limits to borrowing they cannot. The often implicit assumption that the competitive survival of the capitalist firm indicates an efficient structure of ownership and organization, or the explicit claim that competitive markets give rise to efficient transactions cost structures (Williamson, 1985), must therefore be rejected.

Moreover, it can be shown that contested exchange capital markets tend to penalize non-hierarchical enterprise structures. A democratic or polyarchival firm greatly enlarges the number of participants whose actions must be

⁶The model employed to prove Proposition 2 is that of Proposition 1, where "quality" is specified as work effort. Here A is an owner/employer facing a team of identical workers B. The size of the team and the hours of work, as well as the wage, are selected by the employer to maximize profits. After redistribution the team becomes agent A, the workers choosing a wage rate that they jointly face, and on the basis of which each worker (agent B) chooses an effort level in a non-collusive manner to maximize utility, as under the former capitalist employment relationship (Bowles and Gintis, 1993a).

⁷This implication is of course well-known in the principal-agent literature, which asserts, for instance, that in the absence of third-party enforcement, there exists a Pareto-improving transfer of residual claimant status from a principal to a risk-neutral agent.

controlled to ensure a particular outcome. Dealing with a capitalist firm, the lender may need to affect the actions of a manager or a board of directors, while dealing with a democratic firm no less than 51 percent of the entire work force will do.⁸

To avoid a common misunderstanding, it is important to note that democratic political structures do not preclude bureaucracy or the delegation of authority. In our usage, a “democratic” firm is one for which the locus of ultimate accountability within the organization is the body of employees. Democratic firms may well exhibit hierarchical administrative structures. Capital markets concentrate power because rational lenders prefer to transact with organizations with undemocratic political structures quite independently of their administrative structure.

Proposition 5: Money Talks. Ownership of wealth confers power on economic agents by placing them in short-side positions on contested exchange markets.

Power-holding is not coextensive with wealth-holding. Some short-siders, such as managers, may not be wealthy, or their wealth may be a result rather than a source of their power. Moreover, many wealth-holders have no power beyond purchasing power (like passive stockholders). Yet a considerable fraction of top-level decision-making positions in the economy are occupied by wealth-holders. Why are the wealthy not only rich, but powerful? The reason is that offering personal equity or collateral is an effective means of reducing incentive incompatibility in credit markets.⁹ The wealthy are able to offer potential exchange partners more attractive transactions opportunities than the less well-to-do, and thus appear on the short sides of three of the most critical markets of the capitalist system: capital markets, labor markets, and markets for managers. Long-siders who are fortunate enough to make transactions must submit in varying degrees to the command (both direct and indirect) of the wealthy. Less fortunate long-siders are rationed out of the market.

⁸A formal proof of this statement is given in Gintis (1989a). Briefly, consider a firm consisting of several members, who must borrow funds from a lender to finance an investment whose return and default probability are both functions of a decision vector (including, for instance, risk and asset exposure) that is non-contractible. The actual vector chosen is a weighted average of the choices of individuals participating in the decision process. The political structure of the firm is the vector of weights of firm members, a weight being zero if the member does not participate in decision-making. Suppose the lender can pay to influence a member's preferred choice, and chooses a system of incentives to maximize the expected return on the loan. If agents' choices are independent of the amount of influence they have over the outcome, if the result is in the convex hull of the choices of members participating in the decision, if every choice in the convex hull of a set of members can be achieved by some weighting of their relative influence, and if the lender's preferred solution lies outside the convex hull of the participating members, then it can be shown that the cost-minimizing number of participating decision-makers is at most one greater than the dimension of the decision vector, however large the membership of the firm.

⁹While we have focussed on moral hazard and slighted adverse selection as a basic force shaping economic institutions, the equity requirement in credit markets is an important exception. The equity requirement is in part an incentive mechanism, but it also serves to mitigate the adverse selection problem caused by the borrower's private information concerning the value of investment projects. Borrowers who must invest their own funds in a project are less likely to choose excessively risky projects.

In our three markets a relatively transparent claim, money, is exchanged for a relatively difficult-to-monitor service: labor quality and intensity, or managerial behavior. Money talks for the ironic reason that it is the most Walrasian of all goods. Unlike assets denominated in unambiguous monetary terms, assets that entail endogenous enforcement costs (claims against work effort or future labor, for example) provide little basis for reducing the incentive incompatibilities that are inherent in their exchange. For this reason, assets involving human resources confer opportunities in contested exchange markets radically distinct from physical (alienable) assets of equivalent value.

Proposition 6: Pareto inferior Walrasian norms. Anonymity in market exchange fosters norms hostile to the efficient solution of coordination problems.

If only the world were Walrasian! The market failures associated with endogenous enforcement would then disappear, and with the Fundamental Theorem of Welfare Economics thereby reinstated, it would be possible to design asset redistributions to achieve greater distributive justice (by whatever standard) without concern for the incentive problems that redistributions confront in a non-Walrasian world. It is no wonder that the Walrasian model has proven so seductive to defenders of capitalism and socialism alike (for example, Bardhan and Roemer, 1992).

But on second thought, a closer approximation of real world to Walrasian assumptions might do more harm than good. The reason is that efficient and otherwise desirable solutions to coordination problems often are facilitated by social norms valuing such things as cooperation, truth-telling and non-aggression towards others. A Walrasian world would undermine the evolutionary processes supporting these norms.

Kenneth Arrow (1969) once suggested that norms of social behavior, including ethical and moral codes might be “reactions of society to compensate for market failures” or “agreements to improve the efficiency of the economic system . . . by providing commodities to which the price system is inapplicable.” His example was trust. Indeed, the enforcement costs of a society without trust would be monumental.

A closer approximation of the Walrasian ideal of anonymous exchange (recall Buchanan at the fruit stand) renders less likely the evolution of socially useful norms. We will give two examples, the first being perhaps the archetype of a coordination failure: the prisoners’ dilemma. The likelihood that a given prisoners’ dilemma game played iteratively will support an equilibrium strategy leading to mutually beneficial cooperation rather than mutually costly defection is known to depend on the likelihood that each round of the game will be repeated (Axelrod and Hamilton, 1981). The reason is that where repetition is likely, the implicit threat of retaliation against defection is effective, thus encouraging agents to chance cooperation. When markets approximate the anonymity of the Walrasian model, however, the likelihood of such repeated interactions is small. Thus unconditional defection becomes the dominant strategy, leading to a lower payoff for all players.

Second, in interactions of aggression or sharing (modeled by biologists as the hawk-dove game) the equilibrium population composition between the aggressors (hawks) and sharers (doves) depends on whether that interaction will be random, their frequency representing the population composition itself, or non-random, with each strategy being more likely to be played against like strategies (Grafen, 1979; Maynard Smith, 1982). Where likes have a higher probability of interacting, the population supports a higher equilibrium percentage of sharers, and the average well-being of the population is higher due to the reduced costs of conflict among the aggressors. But for likes to have a greater probability of interacting, matching in interactions must be non-anonymous, perhaps reflecting the sense of identity and proximity often associated with neighborhoods or communities.

The generic problem underlying these examples can be understood as a problem of the wrong balance of what Albert Hirschman calls "exit, voice and loyalty." The spot markets of the Walrasian model provide ample opportunity for exit, the ability to walk away from an exchange, and partly for this reason such markets undermine the forms of reciprocity and solidarity captured by the terms voice and loyalty.

Norms are not chosen by agents to maximize their utility, of course. Nor can the evolution of norms be explained by the aggregate social benefits they engender. As Jon Elster (1989) has stressed, neither the rational actor model nor a functionalist explanation provides a fully adequate account of norms and their evolution. But on the basis of reasoning similar to our two examples above, we conclude that the structure of exchanges will alter the evolutionary viability and stability of behaviors such as trust, cooperation, sharing, and the like.¹⁰ The anonymous nature of Walrasian exchange appears hostile to the evolution of these values.

If we are correct, the Walrasian model is internally inconsistent in a way not generally recognized. It relies on a concept of optimization which arbitrarily precludes malfeasance, but it assumes a structure of exchange relations that would provide little evolutionary support for anything but *homo economicus* with a vengeance. In a world populated by amoral economic agents, opportunism would reign and the Walrasian model would lack even the small degree of empirical relevance it now enjoys. The author of *The Theory of Moral Sentiments* had no illusions that his "invisible hand" would work in such a world.

The evolution of norms in response to the structure of exchange suggests that arguments based on exogenously given preferences, natural propensities for opportunism, or the avoidance of hard work may have to be turned around. It has been suggested that *homo economicus* produced capitalism, meaning roughly that human nature being what it is, the evolution of the capitalist rules of the game is both likely and desirable. But this may be just

¹⁰For contributions to a theory of norms along these lines, see Bowles (1989), Bowles and Gintis, (1976, 1986), Boyd and Richerson (1985), Cavalli-Sforza and Feldman, (1981), Dawkins (1989), and Gintis (1972, 1974).

backwards, or at least one-sided; one could equally argue that capitalism produced *homo economicus*.

The upshot of these six propositions is that the standard Walrasian arguments in favor of a competitive capitalist economy are not compelling, even given the conventional assumptions about convexity and absence of externalities. The generic reason underlying our above claims concerning the Pareto suboptimality of competitive exchange is that contested exchanges violate the assumption of complete markets. There is no market, for example, in the quality of work for most occupations. Similarly, there is no market in the non-observable risk-taking behavior of managers.

Williamson's assertion that the institutions emerging from the competitive process will be efficient or "transaction cost minimizing" is equally unsustainable. Since Williamson recognizes that a competitive equilibrium does not satisfy the Pareto criterion when enforcement is endogenous, he is obliged to rely on a more Darwinian sense of efficiency: institutions are deemed efficient if they survive in competition and if superior alternatives cannot be found. The inference that survival entails efficiency is unwarranted, for it ignores the path dependent nature of evolution and the possibility of multiple equilibria. In any model with multiple stable equilibria, biological or economic, where you end up depends on where you've been, and whatever optimality properties may be claimed for the equilibria are at most local rather than global.

The biological analogy can be carried further: the equilibrium distribution of traits in a natural population will not generally maximize the average fitness of any of the species represented. The hawk-dove game clearly illustrates this result. Traits and species which survive are simply those that, starting from the existing population composition, can ward off intruders. Those that proliferate are those that can invade the populations currently existing. The same might be said of institutions. The inference of efficiency is gratuitous (Sugden, 1989). The fact that the cockroach has proliferated and survived, as Friedrich Hayek reminds us, does not give the cockroach moral value.

Williamson is correct, however, to insist that a critique of capitalism must be based on comparison with feasible alternative institutions. In making these comparisons it will be helpful to think of the institutions of capitalism as a means of simultaneously managing two central agency problems of the economy: work and managerial decision-making, particularly concerning risk. The two are not easily separable, as attractive solutions to one may entail inferior approaches to the other. For example, worker ownership and control of firms appears to be in many respects a promising improvement upon capitalist employment relationships with respect to the optimal regulation of work; but given their unavoidably excessive concentration of assets, worker-owners might very well adopt socially suboptimal risk-taking in their joint management of the firm.

Contested exchange economics may facilitate such comparative institutional analysis, allowing a more illuminating discussion than the heated plan-versus-market debate of the 1930s. Friedrich Hayek and the conservatives in

that debate and since have rightly accused Oskar Lange and the critics of capitalism of overstating the capacity of the state to intervene effectively in the economy. Contested exchange theory reveals an ironic complement to this charge. Capitalism's neoclassical defenders have themselves presumed an omnipotent state at least in one area: its powers and information allow the state to enforce contracts at no cost to the exchanging parties. Without this super-state, contested exchange replaces Walrasian exchange and the old defense of capitalism is as unconvincing as the old advocacy of central planning.

Varieties of the New Political Economy

To speak of a post-Walrasian "school" would be misleading. True, there is broad agreement that endogenous enforcement of contractual claims is a central problem in economics, and that its ubiquity undermines the normative propositions of the Walrasian paradigm, exemplified by the Fundamental Theorem of Welfare Economics. But there is little consensus on the importance of endogenous tastes and norms, on the proper way to model endogenous enforcement, on the role of power in the economy, or on the implications of the theory for the evaluation of alternative economic institutions.

An important difference in emphasis in the literature also concerns the origins of the endogenous enforcement problem. Many writers, including ourselves, attribute the need for endogenous enforcement to the principal-agent structure of exchanges characterized by asymmetric information. By contrast, transactions cost approaches give more attention to the enforcement problems arising from the presence of transactions-specific investments as supports for exchanges.

We may clarify some common dimensions and distinct variants of the approach by pinpointing the two most critical abstractions of the Walrasian paradigm: the assumption that contractual claim enforcement is executed at zero cost and hence may be considered exogenous, and the assumption that agents are exogenously determined rather than shaped by the process of exchange. Whether or not these assumptions are taken to hold determines the matrix in Figure 1. For example, the upper-left-hand cell in Figure 1 depicts Walrasian exchange. Though he preceded Leon Walras by half a century, David Ricardo is squarely in this camp. We also place Ronald Coase of the celebrated "theorem" on social cost here, as this result embodies the Walrasian assumptions of complete information, zero transactions costs, and exogenous preferences (though Coase clearly held the zero transactions cost assumption to be unrealistic).

Some post-Walrasian economists drop only the external enforcement axiom, and thus consider the contested nature of exchange explicitly, but not the exogeneity of the agents. Efficiency wage theory (Shapiro and Stiglitz, 1984) principal-agent analysis (Shavell, 1979), and transactions cost analysis (Williamson, 1985) are generally of this type, as is much of the work of the

Figure 1

Varieties of Economic Theory

		Exogenous Claim Enforcement	Endogenous Claim Enforcement
Exogenous Preferences and Norms	Walrasian Exchange	Ricardo Walras Arrow-Debreu Coase/Social Cost	Instrumental Contested Exchange Solow/Shapiro/Stiglitz Holmstrom/Ross/Shavell Williamson Hurwicz/Groves
	Dynamic Culture and Contractual Exchange	Dynamic Culture and Contractual Exchange	Dynamic Culture and Contested Exchange
Endogenous Preferences and Norms	Mill Hayek Marshall Sen	Smith Marx Akerlof North	

property rights school. This work accepts the Walrasian model's methodological individualism and objects only to its artificially truncated notion of self-interest and complete information.

Conversely, other post-Walrasian economists have rejected the exogeneity of preferences and norms without challenging the exogenous enforcement axiom. Their theory of markets is entirely Walrasian, while their theory of preferences stresses the endogenous evolution of capacities, beliefs, and desires. One thinks of the very contrasting work of Amartya Sen and Friedrich Hayek, for example. John Stuart Mill and Alfred Marshall also belong here, for their lively interest in the endogeneity of preferences juxtaposed with their advocacy of what became the textbook neoclassical theory of exchange (they wrote the textbooks!).

Lastly, some economists drop both Walrasian assumptions, taking both the agents' behavioral rules and the enforcement of claims as endogenous. This is the approach of many classical economists, Adam Smith and Karl Marx among them. Both wrote extensively about endogenous preferences, and both held conceptions of market exchange consistent with the post-Walrasian treatments of labor markets and credit markets. Douglass North's (1981) treatment of transactions cost economics with endogenous ideology is another example, as is the emerging literature on customs, norms and cooperation (Axelrod and Hamilton, 1981). This is also, obviously, our approach.

Fortunately for the tractability of our models, many important problems can be convincingly analyzed without taking explicit account of the endogeneity of preference and norms. But the abstraction of endogenous preferences cannot be a general rule, for the post-Walrasian conception of exchange as a

endurable and face-to-face relationship, as we have seen, makes the endogeneity of agents an unavoidable conclusion. And the assumption of exogenous preferences, while often necessary, limits many important policy and normative conclusions derived from the analysis. The reason is that when we write about the satisfaction of wants, or general criteria such as Pareto optimality, it is hard to avoid the issue of the origin of the wants in question, and why these wants, as opposed to others which could as well have emerged from different initial conditions, should be satisfied.

We expect interest in these various approaches to grow, in part in response to growing real world importance of exchanges conforming more to the contested exchange model than to the exogenous enforcement model. One thinks here of international transactions in which the lack of a sovereign enforcer makes the Walrasian assumption untenable, or transactions concerning information in which the relevant property rights are difficult to define and enforce, or the evolution of the structure of production towards increasingly complex activities producing services in teams in which the individual work contribution is difficult to identify. An increasing interest in endogenous preferences may also reflect the growing malaise amongst economists and others concerning what appears to be an unravelling of valued social norms.

Beyond its possible application to real world concerns, the contested exchange approach may foster fundamental rethinking of the structure of economic theory and its relationship to empirical studies and neighboring disciplines. Such approaches endow economic theory with a degree of open-endedness and path-dependency more characteristic of biology and geology than of physics and mathematics. This is nowhere clearer than in the key analytical tool of post-Walrasian economics, game theory. Consider the multiplicity of defensible solution concepts, or the indeterminate status of rational action itself, in many game situations. Faced with this open-endedness, progress and relevance in economic theory may require a more symbiotic relationship with economic history, experimental studies, and econometric testing, areas of study which become even more essential when the axiomatic first principles are called into doubt. In this way, the post-Walrasian paradigm is likely to expand the disciplinary boundaries of economics to include, as in the 19th century, the selective study of law, history, sociology, psychology, and politics.

The classical economists were always prepared to assign agents to categories (like land, labor, capital), to entertain asymmetrical relations among such categories (for example, capitalists hire workers, not the other way around), and to develop institutionally specific theories of the income payments and market dynamics of each (like the distinct classical theories of rent, profit and wages). One of the more unfortunate by-products of the Walrasian revolution, we believe, is the intolerance its adherents have instilled for such distinctions. When an adequate model of the capitalist economy is eventually forged, it will probably be populated not by the faceless general variables of the Walrasian paradigm, but by land, labor, information and capital, rich and poor, men and

women, and the more and less powerful, the distinctions among which will be central to understanding the economy and its evolution.

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