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# Four Dogmas of Environmental Economics

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**ABSTRACT:** Four dogmas have shaped modern neoclassical economics. The first proposes that markets may fail to allocate resources efficiently, that is, to those willing to pay the most for them. The second asserts that choices, particularly within markets, reveal preferences. The third is the assumption that people always make the choices they expect will benefit them or enhance their welfare. The fourth dogma holds that perfectly competitive markets will allocate resources to their most beneficial uses. This is the doctrine of the invisible hand.

I argue that these dogmas of applied welfare economics should be abandoned. One consequence of doing so will be an increased interest in the institutional context of production. A second will be a turn toward empiricism.

**KEYWORDS:** Choices, externalities, market efficiency, preferences, welfare economics

## DOGMA I: MARKETS MAY FAIL

‘The assertion of market failure’, one economist writes, ‘is probably the most important argument for government intervention.’<sup>1</sup> Another agrees: ‘It is the failure of the market system to allocate and price resource and environmental services correctly that creates the need for economic measures of values to guide policymaking.’<sup>2</sup> A third states that any governmental intervention

to achieve environmental goals should be based on the existence of a market failure (an ‘externality’). An ‘externality’ is a cost that is borne by a person other than the person who caused the cost to arise.... Absent market failure, environmental degradation is not by itself sufficient to justify governmental action.<sup>3</sup>

I shall argue that as long as individuals are assumed to be rational utility maximisers, markets will always allocate resources to those who are willing to pay the most for them and, therefore, that the price of goods will always reflect the full social costs, including the bargaining costs, of providing them. Accordingly, while very good reasons may exist for environmental regulation, allocatory efficiency, since it is automatic, cannot be one of them.

Markets will never fail to allocate resources efficiently because individuals will bargain to extract all possible benefits from trade. If rational utility maximisers do not bargain to change a situation, they must prefer it, given the costs of altering it. 'The conclusion, unpalatable to many economists,' C. J. Dahlman observes, is that any outcome that exists 'must be optimal, and if it does not exist it is because it is too costly, so that is optimal too.'<sup>4</sup> An honest cost-benefit analysis, then, could only validate the status quo.

'The concept of market failure', as Alan Randall has written, 'seems entrenched in the conventional wisdom of economics, if the conventional wisdom is most clearly revealed by what respected economists tell undergraduate students and policymakers'.<sup>5</sup> Yet no one has explained why or how individuals who are rational utility maximisers can fail to realise all potential gains from trade within given constraints, including constraints such as the costs of making trades, enforcing contracts, establishing property rights, and the like. If these costs were lower – if, for example, a property-rights regime more conducive to trading were in place – greater gains might then be possible, and individuals would realise them. One might then try to change the institutional context in which a market operates – but one cannot speak of that market as inefficient.

This is essentially the reason that many economists have given up on the concepts of 'allocatory efficiency', 'externality', and 'market failure' to discuss instead how to design institutions – including property rights regimes – to lower transaction and other costs and increase potential gains from trade. No market ever fails to be efficient. Different institutional arrangements and moral norms, however, may make one society more productive than another.

### 1. *Utility Maximisers Always Maximise Utility*

'Externality', as Alan Randall has rightly said, is 'a vacuous and entirely unhelpful term'.<sup>6</sup> The same may be said of the term 'market failure'. In any market, individuals will find some trades are too costly to be profitable, and therefore they will not make them. The costs that defeat some trades may be associated with the activity of trading itself, for example, the costs of setting up and enforcing tradeable property rights in otherwise unowned goods or goods owned in common. Rational utility maximisers will take these transaction costs into account just like all other kinds of costs. If so, individuals trading in markets must realise all potential gains from trade within given cost constraints. Markets cannot fail, then, to price resource and environmental services correctly or to allocate environmental assets to those willing to pay the most for them.

This is analytically obvious, as is well known, with respect to markets in which people can bargain costlessly, in other words, in situations in which the activity of arranging transactions itself consumes no resources. As I shall argue presently, however, the cost of undertaking transactions does not differ in principle from any other customary and usual cost of doing business. Accord-

ingly, if it is analytically true that markets are efficient when transaction costs are zero, they must be efficient when these costs are positive as well.

To see this, let us begin by considering a society in which individuals can transact costlessly with each other. It will always stand at a Pareto frontier. By this, I mean that no further reallocation could make any individual better off without harming someone else. Markets without transaction costs will always reach such a Pareto superior position, because every individual who stands to gain from a change will make it, if he can do so costlessly and no one objects. We must assume, indeed, that all such changes, wherever possible, have already occurred.

It is also trivially true that a market without transaction costs will always meet the Kaldor-Hicks efficiency test, because the 'winners' (those who are better off as a result) will in fact compensate the 'losers' (those who would be made worse off) if the winners could still benefit from the change. Since all such changes would be costless, we must assume they have already been made.

In a world without transaction costs, in other words, every Pareto superior move will have been enacted instantaneously, since everyone who stood to gain would have compensated, insofar as that gain allowed, those who would otherwise have lost as a result of that move. Since all the winners would have already compensated the losers to exhaust all potential wealth-increasing trades, the Pareto 'unanimity' rule and the Kaldor-Hicks compensation test coincide.

Guido Calabresi, in an essay underscoring this 'simple truism' (as he correctly calls it), attributes it to Nicholas Kaldor himself. In stating the Kaldor-Hicks compensation test, Kaldor noted: 'This principle, as the reader will observe, simply amounts to saying that ... any such policy could be carried out in such a way as to secure unanimous consent', and therefore it does not require interpersonal comparisons of utility.<sup>7</sup>

Today, we express the same insight when we speak of Kaldor-Hicks efficiency as a potential Pareto improvement test. As Calabresi points out, in a world without transaction costs, potential improvements would become actual, so that 'society will achieve Kaldor-Hicks efficiency by unanimous consent without anyone needing to fuss about it'.<sup>8</sup>

The truism that Pareto unanimity and Kaldor-Hicks efficiency coincide in a world without transaction costs also follows from the argument Ronald Coase used to show that in the absence of transaction costs people will always negotiate to the same outcome (an agreement that maximises wealth) no matter how property rights are initially distributed, or even if no such rights exist. George J. Stigler dubbed this result the Coase Theorem, which he formulated as follows: '...under perfect competition, private and social costs will be equal'.<sup>9</sup>

Now, we have seen that a society without transaction costs will always reach a Pareto frontier, meet a Kaldor-Hicks efficiency test, and equalise private and social costs. What is important to recognise, however, is that this will also be true of a society in which factories pollute and all sorts of 'spillovers' and other 'third-

party' effects abound. The affected third parties, if they are rational utility maximisers, will pay whatever costs they must bear – including transaction costs – to reallocate resources, for example, to stop the 'spillover', if the benefits of doing so outweigh these costs. If individuals fail to pay transaction costs – if negotiation is too onerous – they must regard the status quo as preferable in view of those costs. Accordingly, markets will succeed as well as possible to allocate resources efficiently, and prices will reflect all the costs – including the transaction costs – involved in providing or exchanging those resources.

To see how this is true, imagine two societies that are alike in every respect except that in one bauxite is expensive because it is hard to find or to form into aluminium ingots, while in the other, because of some wonderful technology, aluminium products are so easy to produce they are practically free for the asking. While the two societies allocate equally well the resources they have, one will have more to allocate, because it has the technology that makes bauxite cost less. The economy with this technology is more productive than the one without, but not necessarily any more efficient.

Similarly, the society that installs an organisational technology to lower bargaining costs (the introduction of money into a barter economy, for example) does not thereby close in on some presumed or supposed Paretian or Kaldor-Hicks nirvana, the location of which can be determined beforehand. Rather, that society will shift its present frontier outward by making goods and services less costly. There is really no difference, then, or no need to distinguish, between moving toward a production frontier and shifting that frontier outward.

In view of given resource, institutional, and technological constraints, utility maximisers will always maximise utility. Whatever is, is efficient. This *reductio* of neoclassical theory has been in the literature since the 1930s, when Coase wrote about the theory of the firm.<sup>10</sup> The premises of neoclassical theory, on the assumption that transaction costs are regular costs of production, lead logically to the conclusion that every market is perfectly efficient given resource limitations, and that social and private costs always coincide. Neoclassical economic theory can provide no basis for policy beyond an automatic vindication of the status quo. The price is always right.

## 2. *Transaction Costs are Regular Production Costs*

We associate with Ronald Coase – particularly his early work on the theory of the firm – the insight that transaction costs are ordinary constraints on production. 'In order to carry out a market transaction,' Coase writes, 'it is necessary to discover who it is one wishes to deal with, to inform people that one wishes to deal and on what terms, to conduct negotiations leading up to a bargain, to draw up a contract ... and so on.'<sup>11</sup> In a justly famous article, C. J. Dahlman observes: 'It is difficult to see in what significant way ... transaction costs differ from regular costs of production.'<sup>12</sup>

Transportation costs (as Dahlman suggested) illustrate this point. People pay transportation costs when they expect to benefit as a result. The same is true of transaction costs. There is no logical difference. Markets therefore internalise equally well both kinds of costs. In a market with no transportation costs, people in Vladivostok would pay lower prices for pineapples from Costa Rica. In a market without transaction costs, people in New Jersey would pay lower prices to protect biodiversity in Brazil. If transportation were free, many wealth-enhancing exchanges would occur that these costs now defeat. Ditto, transactions. A theory of market failure could rest equally well on the presence of transportation costs as on the presence of transaction costs. Costs of either kind justify governmental intervention equally well.

Why not instruct the government to reallocate resources, then, as a market without transportation costs would have done? To be sure, when transportation costs are reasonably small, individuals can manage them, but when they are great, or a lot of different individuals in different places are involved, these costs often become unmanageable. The government, then, must allocate resources to take advantage of the wealth-producing transactions individuals would make but for transportation costs. Or bauxite costs. Or labour costs. And so on.

Once economists develop methodologies to determine preferences, the government can then allocate resources to maximise the satisfaction of those preferences by emulating the outcome of a hypothetical market, i.e., one without transaction costs or, for that matter, transportation costs, costs of materials, labour costs, and so on. Economists could then instruct bureaucrats to ‘correct’ market failure by ‘pricing’ goods and services as they would be priced in a market in which there are no costs, such as transaction costs and transportation costs, that defeat wealth-enhancing exchanges people would otherwise make. No extensive mathematical work is necessary to determine prices in cost-free markets. The wonderful thing, of course, is that all goods and services would be free.

### 3. *The Pigouvian Illusion*~~~~~

The pointlessness of neoclassical economic theory with respect to environmental policy is illustrated by the example with which Arthur Pigou argued (as Paul Samuelson notes) that ‘there is a *prima facie* case for intervention’ when ‘an individual’s actions have effects on others which he does not take into account in making his decisions’.<sup>13</sup> To illustrate the problem of externalities, Pigou wrote that such an uncompensated injury would arise ‘when the owner of a site in a residential quarter of a city builds a factory there and so destroys a great part of the amenities of the neighbouring sites’.<sup>14</sup> According to Pigou’s argument, the factory would then be able to sell its products at lower prices than reflect the full costs – including the ‘third party’ costs – of producing them. An inefficient allocation of resources would then result, since society will have more of the factory’s goods than it wants relative to peace, quiet, and other amenities.

The factory owner and the residents, as rational utility maximisers, however, will bargain to an outcome that forces the prices the factory owner charges fully to reflect the value of the amenities he destroys. If what zoning law there is favours the factory owner – if the amenity rights are either his or are unowned – then, by polluting the neighbourhood, he foregoes the amount the residents are willing to pay to persuade him to leave them in peace. The prices the factory owner charges will reflect the amenity rights – every penny the residents are willing to pay for them – because the factory owner will be out-of-pocket exactly that amount, which he could have otherwise extracted from the residents.

In this instance, the residents will indeed subsidise the factory's products either by direct transfers to the owner or by suffering the pollution. This is an efficient outcome, however, because the residents must either be willing to pay for the amenities they enjoy, or they must forego them. The same situation would arise if the residents were squatting on the land, since they would have to move or buy it from the factory owner. This is not an instance of market failure but a consequence of the market position of the residents, in other words, an outcome dictated by the initial distribution of entitlements.

Now suppose that what zoning or other law there is favours the residents. The factory owner, then, must purchase the amenity rights from them, which he will do, if the rights are worth more to him than to them. Once again, resources will flow to their most valued uses, and, if the factory owner succeeds in buying the amenity rights, their value will surely show up in the price of his products.

An economist in the Pigouvian tradition may respond that transaction costs, such as the effort involved in overcoming 'free-rider' problems, may prevent the residents from negotiating with the factory owner. A gap would therefore appear between the aggregate of what the residents are willing to pay individually and what they collectively manage to offer for the amenities they want to purchase. A Pigouvian would conclude that market is not efficient. The market fails to reflect the amount individuals are willing to bid or ask, in this instance, for amenity rights, and this justifies governmental intervention.

This objection carries no weight. If the parties fail to transact, it can only be because they believe the transaction costs are not worth paying. Transaction costs are normal in every exchange, and if neither side is willing to bear them, the welfare economist must conclude that the status quo is the best arrangement for all concerned, given institutional, resource, and information constraints. The residents cannot wish bargaining costs away. Neither can the government.

If the zoning favours the factory owner and the residents are unwilling to make the effort to organise themselves to pay him to locate elsewhere, they must prefer to suffer the pollution than pay a price that reflects the full costs – including the costs of organisation and leadership – necessary to purchase the amenities they would like to possess. If the zoning favours the residents, the factory owner must then bear the transaction costs of transferring the relevant rights. In that situation, the factory will, indeed, locate elsewhere, and this, too, will an efficient, wealth-maximising, and Pareto-perfect outcome.

This same *reductio* applies to a range of resources economists identify as various kinds of ‘public goods’. Where property rights can be established in these goods – in local fisheries, for example – then it is important that these entitlements are initially distributed in a way that is likely to lead to a result that the policy maker seeks. With respect to goods and services in which property rights cannot be established – the climate, for example – regulation is plainly required. The problem is that applied welfare economics, since it only validates the status quo, cannot provide this justification.

Welfare economics tells us that individuals, insofar as they are rational utility maximisers, will make all and only the bargains that maximise their welfare within resource constraints. If rational utility maximisers destroy the global commons, they must believe that the benefits of continuing to pollute outweigh the costs – including the transaction costs – involved in reaching any other solution. Plainly, it is unhelpful to claim that the tragic destruction of the global commons is an efficient wealth-maximising outcome given institutional, resource, and informational constraints. This claim is logically consistent, however, with the foundational principles of neoclassical welfare economics.

Critics who draw out from the premises of neoclassical theory the conclusion that markets never fail do not necessarily defend a *laissez-faire* position. They simply question the policy relevance of concepts such as welfare, utility, efficiency, Pareto superiority, Kaldor-Hicks compensation tests, opportunity costs, and so on. These concepts, as embedded in neoclassical welfare economics, tell us that whatever is, is efficient. We do not infer from this, however, that we should accept the status quo. Rather, we infer only that we should reject the conceptual framework of applied welfare economics.

Too often, neoclassical economists misidentify their opponents as enemies of governmental intervention as such, as if any attack on their theory is an attack on regulation. According to Joseph Stiglitz, for example, critics of the neoclassical paradigm argue that if ‘the government faces the same information and transactions costs that confront the private sector – then there is nothing the government can do that the private sector cannot do’.<sup>15</sup> This is incorrect. There are tons of things the public sector may do better than the private sector, but maximising utility and correcting market failures are not among them.

Neoclassical economists may reply that the government is better situated than the private sector to provide public goods such as national defence. It is better situated, according to this reply, because transaction costs, notably, free-rider problems, keep individuals from providing certain public goods, such as military security, for themselves. These theorists may offer a similar justification for regulations that protect such public goods as the oceans and the air. These examples suggest that transaction costs prevent individuals from using markets to form militias, hire police, maintain air quality, and provide other public goods governments may supply. Therefore, the thesis that transaction costs are logically indistinguishable from other production costs would seem to be mistaken.



I do not dispute the thesis that the government is better situated than the private sector to raise armies, regulate pollution, and to provide other services that rely ultimately on the use of force to coerce people to behave in public-spirited ways. The reason that the government acts legitimately in these areas while private agencies do not, however, may not depend on transaction costs. The government has a natural monopoly on violence. Only the government can legitimately hang you or put you in jail. Given a moral consensus on this point, it follows that whatever activity requires the coercive use of force will fall to government. It is easy for people to provide security for themselves by hiring body guards, and perhaps we could save money by leaving security to a market. There is no way, however, that our political morality allows us to do this.

Our military establishment hardly constitutes a public good individuals could purchase for themselves but for free rider problems and other bargaining costs. Rather, virtually everything about our military – the persistence of the Marine Corps, for example – reflects path-dependent political decisions, that is, decisions which must be explained in historical terms. Conceptions of geopolitical roles and responsibilities are also crucial. Absent these political decisions, it is hard to know why the United States would need a military establishment. No foreign power threatens its borders. Other nations – Costa Rica would be an example – have no military. Why would Americans as individuals feel the need for a standing peace time army? Why should we think transaction costs rather than historical and legal factors explain the power of Congress to make war?

One can tell ‘just so’ stories to characterise the industrial-military complex as a solution to a coordination problem, but that is because stories of that sort are so easy to tell. Other explanations, which make no reference to utility or preference satisfaction or transaction costs, appear far more plausible. These include the government’s natural monopoly on violence and a particular view political leaders share concerning national interests and responsibilities.

Recent decisions to invade Iraq, provide security in Somalia, reinstall President Aristide by force in Haiti, and so on, are the products of political leadership by the last two administrations. Those responsible for these decisions gave no thought to maximising utility, ‘internalising’ externalities, solving ‘free rider’ problems, or anything of that sort. They commissioned no contingent valuation (CV) studies. The geopolitical strategy of the US government abroad, like its approach to crime at home, arises from a mix of political authority, public opinion, expert advice, groping in the dark, and sheer chance. There is no way to predict foreign policy on the basis of what hypothetical markets would do in the absence of bargaining costs. The ‘public goods’ analysis is irrelevant.

There may be occasions when the government, for special reasons, may provide public goods more conveniently than the private sector. Even in these instances, however, the government may well act for other reasons than efficiency. The Clean Air Act and Clean Water Act, for example, protect rights of person and property against the trespass or coercive assault pollution represents.

These statutes also may be construed in terms of providing ‘public goods’ such as clean water and air. The libertarian interpretation is more plausible, however, since these statutes are notoriously indifferent to economic efficiency. We require an argument, then, to show that in regulating pollution – or in protecting water and air quality – the government acts in place of markets to maximise efficiency rather than to protect rights.

We require an argument to show that the government seeks to overcome transaction costs rather than to vindicate the moral and political persuasion of the people or their leaders. We require an argument to show why cost-benefit calculation rather than political deliberation is better fitted to bring moral, political, ideological, scientific, and other kinds of knowledge into public consideration. If one assumes initially that the government regulates the environment to correct market failure, then one can criticise present policy as inefficient. But on other assumptions about the basis of public authority – to protect rights of person and property, for example – the policy may make better sense.

#### 4. *The Neoclassical Rejoinder*

Mainstream resource economists have not awakened from their dogmatic slumbers sufficiently to grasp the possibility that transaction costs are regular costs of production. William Baumol and Wallace Oates, in their popular textbook on environmental policy, for example, concede that when transaction costs are low, individuals can deal with them, so that no need may arise for governmental intervention. Where pollution affects a great many people, however, ‘the process of direct negotiating and agreement will generally be unmanageable’.<sup>16</sup> Baumol and Oates apparently assume that what individuals find unmanageable, bureaucracies can manage nicely. If this is *prima facie* true of transaction costs, however, it must also apply to transportation costs, labour costs, and so on.

How much would it cost the government to identify all the preferences markets fail to reveal, to determine the amounts people are willing to pay to satisfy those preferences, and then to transfer property rights as a hypothetical market would transfer them, but for transaction costs? Why should we think that the market equilibrium the government creates would be better than what actual markets achieve, in view of the costs of deriving that new equilibrium?

Whatever transaction costs individuals might endure are likely to be negligible when compared to those the government must pay to ‘get prices right’. Some economists may believe the expenses the government incurs are worth paying, since most will be paid to them. Ronald Coase ridicules the idea that the government will allocate resources more efficiently than markets even when transaction costs are high. According to Coase, ‘the costs involved in governmental action make it desirable that the “externality” should continue to exist and that no government intervention should be undertaken to eliminate it’.<sup>17</sup>

As the economic soap opera associated with the *Valdez* fiasco illustrates, when pockets are deep, the opportunities for corruption are so outstanding, the occasions for litigation so rife, the penchant for academic cavilling and grandstanding so promiscuous, and the likelihood of consensus so small, that only a 'blackboard' economist, rather than one with any political experience, could think that the prevalence of 'externalities' or transaction costs provides even a pretext – much less a *prima facie* basis – for governmental intervention. The costs involved in figuring out the costs of the *Valdez* pollution could easily exhaust the national treasury, if the government fully funded the controversies among economists which that one incident has engendered.

C. J. Dahlman agrees. The Pigouvian argument that markets incorrectly 'price' environmental assets fails to show 'that there is good reason for assuming that somebody else, outside the market, can do it better'.<sup>18</sup> Charles Perrings, an insightful economist associated with ecological economics, adds:

The implication is that if neither the state nor any other nonmarket agency can do it better, then there is no difference between private and social cost and no cause for believing an external effect to exist. The whole Pigouvian tradition is alleged to rest on an ideological assumption that the state has privileged knowledge of the Pareto optimal outcome, and is better equipped, informationally, to achieve it.<sup>19</sup>

An analogy will illustrate this point. Let us suppose that we are a society of 250 million sailors, each in his or her unique boat, and each trying to sail to a different destination. As superb sailors, each individual is assumed to maximise his or her progress given the constraints of wind, tide, and weather. Now, suppose that the wind sometimes fails in some places and the tide sometimes goes the wrong way for many boats. When wind, tide, and weather 'failure' is negligible, individuals can deal with it, but when these 'failures' are great, they may seriously impede progress. An applied welfare theorist might then conclude that the government should intervene to determine where the 250 million sailors want to go and how far they would get under ideal sailing conditions. The government should then reallocate the boats to these preferred positions.

Perrings, Dahlman, and other critics may contend that the government would need to use more resources than the sailors to get them further along on their course. To be sure, the government must provide services that involve the use of force. A political authority may set and enforce rules of the road so that boats do not bump into each other. And the sailors may use political institutions and processes to accomplish all sorts of other things, for example, to subsidise technologies that will help everyone. It's up to the people themselves, acting through their political leaders and representatives, to determine what role their government should play. This role emerges from an endless series of historically conditioned, culturally based, path-dependent decisions. Theories of market failure have little if anything to do with the way political decisions either are or ought to be made.

### 5. *Routes to Regulation.*

Mainstream economists tend to assume that the ‘market failure’ approach to environmental regulation is the only game in town. They conclude that if ‘public choice’ critics object to that approach, they must oppose all governmental intervention to protect the environment. Since a blanket opposition to environmental regulation would be absurd, neoclassical economists airily dismiss their Coasian and Chicago-based critics.

This is essentially the reply to Coase that Baumol and Oates offer in their textbook. They observe essentially that the *reductio* of welfare theory – the principle that rational maximisers always maximise rationally – leads to unmanageable results. They conclude, therefore, that the principle must be wrong. It is wrong, of course, but that is why it is a *reductio* of the neoclassical theory Baumol and Oates espouse. High transaction costs will, indeed, defeat exchanges that individuals would otherwise like to make. This is true, however, of labour, transportation, and raw materials costs as well. One must also show why transaction costs provide any stronger or different basis for governmental intervention than costs of any other kind.

C. A. Nash, following Baumol and Oates, rejects the *reductio* that whatever is, is optimal. ‘Although the argument is theoretically correct, there seems great cause for doubt as to its widespread applicability in practice.’<sup>20</sup> Nash explains: ‘groups of individuals may lack the organisation or leadership to undertake the type of negotiation involved.’<sup>21</sup> Transaction, transportation, leadership, and other costs may be prohibitive, but that is beside the point. The point is that either none of these costs or all of them are evidence of market failure.

Nash brands those who make this argument the ‘opponents of state intervention’.<sup>22</sup> Those who show that the neoclassical ‘market failure’ approach amounts to an absurdity, however, are not necessarily enemies of state intervention. They may simply question the relevance of neoclassical welfare economics to public policy. Neoclassical economists too often assume that their critics oppose regulation as such. These critics may oppose only the kind of intervention that attempts to ‘get the prices right’ by imagining what hypothetical markets would do in the absence of transaction costs.

Indeed, Coase’s central argument may provide the basis for an interesting alternative approach to regulation. Coase showed us that when transaction costs are positive, the initial distribution of entitlements will strongly influence market outcomes. In Pigou’s example, as we have seen, if the residents initially own the amenity rights, the factory will not locate in the neighbourhood, because the developer would find the transaction costs prohibitive. But if the factory owner starts off with those rights, he will locate the factory in that neighbourhood, since the residents would have to pay for organisation and leadership, which may overwhelm the resources available to them.

This example teaches three lessons. First, it is plain, as we have seen, that whatever outcome the factory owner and the residents arrange is efficient in view of cost constraints and the initial distribution of entitlements. Thus, both building the factory and not building it are efficient; the difference in outcome arises from the way entitlements are initially distributed. Commentators thus point out that ‘an unlimited array of such “maxima” (Pareto-efficient points) are possible, as a function of different initial rights distributions’.<sup>21</sup>

Second, policies such as the ‘polluter pays’ principle can never be justified in the context of neoclassical economics. We have seen that if the polluter – in the example, the factory owner – must pay the transaction costs, the factory will not be built. This will be efficient. If the residents must pay, however, then the factory will be built, since they cannot overcome bargaining costs. This is also efficient. Similarly, if the residents choose to bear the damage pollution causes rather than to buy off the polluter, that outcome is efficient, given the initial distribution of entitlements. A different initial distribution of entitlements, given the presence of bargaining costs, would yield the opposite – but equally efficient – result. The neoclassical analysis, then, must be indifferent between ‘polluter pays’ and any other distribution of entitlements. Every initial distribution of entitlements leads to an equally efficient result.

Third, even if the way entitlements are distributed makes no difference from the point of view of allocatory efficiency, it matters on other grounds. If pollution represents an assault, trespass, and violation of personal and property rights, for example, the ‘polluter pays’ principle could plainly be justified on moral grounds. Libertarians, for example, would regulate pollution not as a social cost or external diseconomy but as a form of coercion. In that case, each individual would be entitled to injunctive relief from any and every polluter. If absolute elimination of pollution is impractical, then public law can strive to follow the path of private law to minimise it. Polluters have much more to fear from this libertarian approach than from Pigouvian cost-benefit analysis.

Environmentalists have reason to welcome the Coasian attack on ‘market failure’ arguments. It is customary to object to this attack on grounds of its motivation: it comes from Chicago, where theorists are notoriously unsympathetic to governmental intervention in economic activity. One does not have to be from Chicago, however, to like the Coasian refutation of neoclassical welfare economics. In fact, one can be an ardent environmentalist and like this argument, because it returns regulation to the political, ethical, scientific, and ideological realm. It gets it away from the narrow domain of economics.

Besides, the logic of the *reductio* seems inescapable. Absent a convincing and intuitively compelling argument to show that transaction costs are not regular costs of production, we have to accept the conclusion that individuals will always bargain to a Pareto and Kaldor-Hicks efficiency frontier. Allocatory efficiency, willingness to pay, utility, hypothetical markets, preferences, and all the rest of it, become useless theoretical terms to be consigned to the flames. This

would permit us to discuss environmental policy in more appropriate terms, including our moral intuitions about our responsibilities to each other and our view of scientific evidence about what we are doing to the earth.

Economic goals, such as greater productivity and improved international competitiveness, are also very important. Instead of worrying how to make society more efficient, therefore, economists should return to the macroeconomic problem of improving its productivity. It is a long-standing embarrassment to economic theory that microeconomic efficiency has no established relation, either conceptual or contingent, with macroeconomic performance. To reach our macroeconomic objective, prosperity (steady growth, full employment, low inflation, increased productivity, and so on) we need the right fiscal and monetary policy along with institutional and other technologies that will permit us to shift the production frontier outward. This has no relation to what neoclassical welfare economists entreat us to do, which is to aim at an automatic Kaldor-Hicks efficiency frontier, so that they can engage in CV surveys and continue to theorise needlessly about hypothetical markets without transaction costs.

The critique I have rehearsed here rejects Pigouvian ‘externalities’ and ‘public goods’ as bases for environmental regulation. It shows that policies environmentalists favour – such as the ‘polluter pays’ principle – cannot be derived from neoclassical theory. Environmentalists should regard this as a blessing. They should see that by abandoning neoclassical welfare economics, they strengthen both the legitimacy of public authority and the role of environmental policy. The critique of welfare economics leaves intact all the important reasons for regulation, this is, our ethical, scientific, religious, cultural, historical, aesthetic, ideological, and political values and beliefs. The only condition the Coase theorem puts on governmental intervention is a liberating one, namely, that it should not try to enlist neoclassical economic theory on its side.

## DOGMA II: CHOICE REVEALS PREFERENCE

Paul Samuelson, according to the apocryphal literature of economics, expressed disbelief when a student told him that a beggar downtown, when offered a choice between 50 cents and a dollar, always chose 50 cents. ‘But this would be irrational,’ Samuelson retorted, ‘It can’t be true.’

Challenged to see for himself, Samuelson accompanied the student to the corner where the beggar sat with his cup. The Nobel economist held out 2 quarters in one hand, a dollar in the other. ‘I will offer you a choice’, he told the beggar. ‘You can choose either 50 cents or a dollar.’

‘I’ll take the 50 cents’, the beggar said instantly.

After giving him the coins, Samuelson asked: ‘Don’t you see that choosing 50 cents is irrational? A dollar is twice as much; why didn’t you choose it?’

‘Because if I chose the dollar,’ the beggar answered without hesitation, ‘economists would not troop down here every day to offer me the choice.’

Welfare economists believe that choices reveal preferences. ‘What we do know, scientifically,’ one analyst explains, ‘is that people demonstrate their preferences in concrete, voluntary acts of choice.’<sup>24</sup> Another adds: ‘The concept of preference rooted in real choices forms the cornerstone of the logical structure of economic analysis, and particularly of utility and welfare analysis.’<sup>25</sup>

How does choice reveal preference? An economist replies: ‘A Sunday morning churchgoer demonstrates that she prefers the sermon to an extra hour of sleep.’<sup>26</sup> A woman may go to church, however, not to hear the sermon but to make business contacts, to see friends, or to set an example to her children. (Perhaps she sleeps through the sermon.) If you knew the woman, you could make an educated guess whether she chose and therefore preferred to hear the sermon, meet a friend, pray, listen to the choir, or show off a new hat. An observer who did not know the woman, however, could neither describe her choice, identify the alternatives she weighed, nor infer the preferences she acted upon simply on the basis of her presence in a pew.

The same behaviour may be described in innumerable ways. If you eat the turnip stew your mother-in-law has baked, for example, do you prefer it to another dish, say, the spinach lasagna in the refrigerator? Under one description, yes, but not under another. If your ‘opportunity set’ includes ‘pleasing your mother-in-law’, then I can interpret your choice to reveal that preference. If it includes ‘a low calorie meal’, I can explain your eating turnips in terms of a preference to lose weight. I cannot tell by observation, however, whether you identify your meal as ‘the dish your mother-in-law made’, ‘low calorie fare’, or in any of many other ways. I do not know, then, whether by eating turnip stew, you demonstrate respect for your spouse, a desire to lose weight, a taste for turnips, or any of a thousand preferences. I can stipulate an ‘opportunity set’ to characterise your behaviour, but this is my choice, not yours.

It is *under a particular description* that choice reveals preference. To characterise a person’s ‘opportunity set’ is at once to identify the choice he or she makes and to stipulate the range of preferences which that choice reveals. Commentators often point out that there is no neutral or context-free way to describe the alternatives between which people choose.<sup>27</sup> If the beggar needed telephone change, I may infer that making a phone call was worth at least a dollar to him. If I assume he wanted to feed a parking meter, I derive a different preference. If I include ‘gaming economists’ as part of his opportunity set, I will describe the choice in relation to a different preference. A choice described one way, will reveal one preference; the same behaviour described or interpreted another way will reveal a different preference. Whatever motions are observed – the beggar takes the coins, for example – are consistent with a thousand different choices.

Choice reveals preference, then, in the way that nature yields its secrets, not

willingly to observation, but grudgingly to patient inquiry. This kind of inquiry can be quite extensive; for example, individuals spend years in psychoanalysis to find out how usefully to describe and therefore to understand the choices they make. Economists who seek to determine other people's preferences have developed methodologies, such as contingent valuation, in relation to which the vagaries of psychoanalysis seem straight-forward. In CV surveys, researchers ask people to make choices not in actual but in hypothetical markets. Analysts argue among themselves about how properly to interpret these choices, the opportunity sets they reflect, and the preferences they reveal.

Economists who engage in CV research ask individuals hypothetical questions about how much they are willing to pay, for example, for the protection of a landscape, such as a 'pristine wilderness' in Northern Maine, they will never visit or use. Experts disagree whether a stated response expresses a preference for protecting that particular landscape, for wilderness preservation more generally, for environmental protection as a whole, for a 'warm glow' attendant on contributing to wilderness conservation, for a moral satisfaction taken in contributing to a noble cause, or even for the pleasure of providing a positive answer to a survey. In short, responses to CV surveys are as open as ordinary market behaviour to interpretation. At least as many ways to explain a person's response to a questionnaire suggest themselves as to account for the beggar's response to Professor Samuelson.

The next section of this essay cites several groups of economists who have carefully inquired into the reasons people respond as they do to CV surveys. These research efforts have discovered that respondents use surveys often or generally to express political opinions or moral commitments rather than consumer preferences. These responses, in other words, may reveal 'social or political judgments rather than preferences over consumer bundles'.<sup>28</sup> If so, we may ask how a democratic polity should handle these beliefs and opinions of its citizens. Is a hypothetical market the appropriate mechanism for settling political and moral disagreements? How would we understand, then, the function of political institutions, such as those the Constitution puts in place?

### DOGMA III: PREFERENCE PROMOTES UTILITY

According to the neoclassical paradigm, as Edith Stokey and Richard Zeckhauser have written, 'the purpose of public decisions is to promote the welfare of society'.<sup>29</sup> A. Myrick Freeman III explains: 'The basic premises of welfare economics are that the purpose of economic activity is to increase the well-being of the individuals that make up the society, and that each individual is the best judge of how well off he or she is in a given situation.'<sup>30</sup> Thus, preferences constitute 'data of the most fundamental kind. Value, in the economic sense, is ultimately derived from individual preferences...'<sup>31</sup>



The inference from the preferences of individuals to social welfare makes sense on the assumption that people value and therefore are willing to pay for outcomes they believe will benefit them. If people prefer what they believe is good for them (rather than good for some other reason), in other words, preferences are relevant to well-being. Freeman writes:

Since the benefits and costs are valued in terms of their effects on individuals' well-being, the terms 'economic value' and 'welfare change' can be used interchangeably. Society should make changes in environmental resource allocations only if the results are worth more in terms of individuals' welfare than what is given up by diverting resources and inputs from other uses.<sup>32</sup>

David Pearce, a prominent advocate of 'green' economics, also argues that the only values that count in environmental policy are subjective consumer preferences. He writes: 'Economic values are about what people want. Something has economic value – is a benefit – if it satisfies individual preferences.'<sup>33</sup> Michael Bowes and John Krutilla similarly regard the goal of environmental policy to be a settled question: it is to allocate environmental resources 'to provide the greatest discounted net present value from the resulting flow of goods and services'.<sup>34</sup>

Standard economic theory tells us that under certain well-known ideal conditions, markets may be expected to allocate goods and services efficiently, that is, to those willing to pay the most for them and, therefore, to provide the greatest net benefit to society as a whole, given the scarcity of resources. According to the theory, however, these ideal conditions pervasively and ubiquitously fail to hold with respect to the environment. Resource economists Alan Kneese and Blair Bower of Resources for the Future observed that by the 1960s, it had become clear to them and their colleagues that transaction costs cause market failures so pervasive, at least with respect to environmental 'public goods', that 'the pure private property concept applies satisfactorily to a progressively narrowing range of natural resources and economic activities'. They thought the government must therefore allocate environmental assets. 'Private property and market exchange', Kneese and Bower conclude, 'have little applicability to their allocation, development, and conservation'.<sup>35</sup>

In order to replace markets in allocating resources, the government hires economists to engage in CV research and in other forms of inquiry to measure preferences with respect to the flow of environmental goods and services. Experts employed to carry out this research inquire, for example, how much we are willing to pay (or to accept) to purchase (or to permit) levels or purity or pollution of the water or air. Economists 'define the benefit of an environmental improvement', Freeman notes, 'as the sum of the monetary values assigned to these effects by all individuals directly or indirectly affected by that action... Here, willingness to pay is used as a convenient shorthand way of expressing "values based on individuals' preferences"'.<sup>36</sup>

Researchers engaged in CV experiments have made an important discovery. They have found that whatever reasons people have for valuing nature, considerations of personal welfare or well-being often do not figure prominently among them. Thus, the individual who expresses a willingness to pay for an 'existence' value, such as the protection of a species, may do so for reasons other than a belief that he or she will benefit as a result. Willingness to pay, in this instance, does not correlate with expected welfare, because it does not arise from a judgment a person makes about how an outcome will affect her or him. Rather, willingness to pay has something to do with a judgment a person makes about what is right, good, or appropriate – an ethical not a consumer judgment.

The proposition that human beings can value other goods besides their personal welfare or well-being is not a self-contradiction. People entertain all kinds of political, moral, and ideological beliefs, for example, about pollution. Suppose someone believes as a matter of principle that society ought to minimise or eliminate pollution as a trespass or assault on personal and property rights. How can values of this kind, based on political views rather than on judgments about personal well-being, inform the welfare calculus on which environmental policy should be based?

Motivated by political, ethical, and ideological beliefs, individuals often refuse to cooperate with – or they set very high prices when responding to – CV surveys concerning pollution, endangered species, and so forth. These people generally accept markets as institutions appropriate to satisfy consumer preferences. Many of us cannot rid ourselves of the old-fashioned notion, however, that we should express political, moral, and ideological views not in the surrogate markets CV analysts devise but through political processes and institutions. This may account for some of the difficulties economists encounter in administering surveys.

Social scientists who interviewed respondents to CV surveys in 1992 found 'a large range of strategies for constructing stated WTP [willingness to pay] that had little or nothing to do with respondents' expected utilities'.<sup>37</sup> Reviewing several such protocols, three economists conclude that 'responses to CV questions concerning environmental preservation are dominated by citizen judgments concerning social goals and responsibilities rather than by consumer preferences'.<sup>38</sup> A recent survey found that most respondents, when asked why they cared about species protection, cited ethical commitments and ecological beliefs, rather than any concern related to their personal well-being.<sup>39</sup> A careful study found that ethical commitments often dominate economic or welfare considerations in responses to CV surveys. 'Our results provide an assessment of the frequency and seriousness of these noneconomic considerations: They are frequent and they are significant determinants of WTP responses.'<sup>40</sup>

Economists have long recognised that individuals often explain the choices they make in terms of commitments to social and moral norms, rather than in terms of their own welfare. Summing up the literature in 1977, Amartya Sen

wrote that our commitment to moral values drives a ‘wedge between personal choice and personal welfare’, although ‘traditional economic theory relies on the identity of the two’.<sup>41</sup>

Taking up the refrain, Steven Edwards pointed out that choices ‘motivated entirely out of an unselfish interest in the well-being of others’ fail to reflect considerations of personal welfare, as required by the neoclassical theory.<sup>42</sup> Thomas Stevens et al. write that respondents to their CV study of wildlife values ‘were motivated by ethical concerns, altruism, or the desire to do their “fair share” – concerns that indicate they used decision-making processes inconsistent with the neoclassical paradigm’.<sup>43</sup>

What economists call ‘non-use’ values embody not primarily judgments of personal welfare but opinions we form as citizens about public policy. Very often these political opinions conflict with those on which benefit-cost analysis is based. For example, a majority of Americans may regard pollution as a private trespass to be enjoined rather than as a social cost to be internalised, and this could colour their responses to surveys that seek to internalise those costs. As two commentators note, CV surveys:

are simply opportunities for individuals to comment, without very much opportunity for thought, on a hard issue of public policy. In short, they most likely are exhibiting offhand opinions on the same policy issue to which the cost-benefit analyst purports to give his own answer, not private preferences that might be reflected in their own market transactions.<sup>44</sup>

Welfare economists base environmental policy on preference-satisfaction. They believe that social public policy will then maximise the welfare, well-being, or utility of individuals and therefore of society as a whole. Yet we have seen that in the environmental area, people form their values in relation to human concerns and commitments other than their own well-being. Individuals may be the best judges of their own welfare, but that is irrelevant, insofar as they consider policy outcomes in terms of values other than its effects on them. What role should moral, political, ideological, scientific, historical, cultural, religious, theoretical, and philosophical judgment play in public policy? To be sure, economists respect their own beliefs, but what about the opinions of others?

Economists may respond by expanding the utility function to include everything an individual favours on whatever basis, even if it has nothing to do with judgments about his or her own well-being. But this leads to three difficulties. First, the reason to base policy on preference would disappear. The satisfaction of preference is a good thing – a basis for social policy – only insofar as it promotes expected welfare or utility. If ‘welfare’ and ‘utility’ are simply defined in terms of the satisfaction of preference, however, then we are left to argue in a tiny circle, in which nothing is justified or even defined except in terms of itself.

Second, if we expand the utility function to include everything for which anyone is willing to pay for whatever reason, CV surveys would be equally relevant to all social decisions, such as those concerning equity and justice, to which economists sometimes assert that their methods do not apply. If CV methods can apply to ethical judgments about the environment, how can they fail to apply to moral views in other policy areas, such as equity, as well?

Third, if we expand the utility function to include commitment values and political convictions, we should have to assign a shadow price to the economist's views about the goal of public policy. Every citizen who responds to a CV survey is asked how much he or she is willing to pay for some policy prescription or outcome. Is it fair that the rest of us must pay to enter our views into social consideration, while economists expect to be paid for their theoretical and ideological commitments?

To summarise: If economists expand the utility function to comprise every preference – including political convictions, moral commitments, and ideological positions – then they reduce the relation between preference and utility to a specious, empty, and trivial identity, incapable of explaining why public policy should respond to preferences priced at the margin rather than to views and opinions judged on their merits. Economists could not exclude equity considerations from the utility calculus. And they must include their own policy prescriptions among those to be judged on the basis of willingness to pay.

If economists exclude non-welfare or non-consumption values from the social welfare function, however, they play *Hamlet* without the Prince of Denmark. Human beings value a lot more than their own well-being. Religious, political, moral, ideological, and cultural values are central both to human experience and to environmental policy. These are deeply *human* values; they are anthropogenic in every way. Unlike subjective consumer preferences and like economic theories, these values reflect objective conceptions of the moral and public good.

#### DOGMA IV: MARKET EXCHANGES BENEFIT PARTIES TO THEM

‘The central theorem of modern welfare economics’, writes Francis M. Bator, ‘asserts a correspondence between Pareto efficiency and market performance.’ Market prices will coordinate the production and distribution of goods and services in a way that maximises the perceived benefit or advantage of all participants within the constraint of resource scarcity. ‘Correspondence between Pareto-efficiency and market performance implies, at the least, that decentralised decisions in response to these “prices” by atomistic profit- and satisfaction-maximisers sustain just that constellation of inputs, outputs and commodity-distribution, that the maximum of the specified social welfare function calls for.’<sup>45</sup>

To see how the market operates to maximise social welfare, consider again the Pigouvian example of the factory owner who proposes to pollute a residential neighbourhood. The prices the factory owner charges for his products, as we have seen, will reflect the full value of the damage he causes – every penny the residents are willing to pay to retain the amenities he destroys – because the factory owner will be out-of-pocket exactly that amount, which he could have extracted from the residents in exchange for not polluting. Since prices reflect the full costs of all factors of production, including pollution and transaction costs, they will coordinate exchange at a Pareto frontier.

Suppose that the residents, as is entirely possible, find that the amenity rights are so valuable that they undertake to pay the factory owner to take his threat elsewhere. As a rational utility maximiser, undoubtedly he will. He will move into the next neighbourhood, make the same threat, and extract the same price from them. Indeed, any rational utility maximiser must realise that within legal constraints – or whenever litigation costs are so high as to make legal recourse impractical – he or she may realise at least as much money by making threats as by making offers. Indeed, if the factory owner settled into the business of extortion, he would make more money, because he would never have to tie up capital in a factory. And markets would function efficiently.

The opportunities for making these kinds of threats – that is, creating ‘spillover’ effects – are boundless, and cannot possibly be enjoined, even a fraction of them, by any legal regime bounded by transaction costs. It is probably illegal, for example, for you to threaten to create a disgusting nuisance in a fancy French restaurant, but the owner or the diners would find it much cheaper to pay you not to carry out your threat than to try to persuade an overburdened district attorney to try you after the fact. Indeed, the law can never foresee all the threats people might make, and, therefore, it would not deter a sharp operator intent on profiting through extortion.

E. K. Hunt, a radical critic of mainstream economics, emphasises this point:

Since the vast majority of productive and consumptive acts are social ... it follows that they will involve externalities. Our table manners in a restaurant, the general appearance of our house, our yard or our person, our personal hygiene, the route we pick for a joy ride, the time of day we mow our lawn, or nearly any one of a thousand ordinary daily acts, all affect, to some degree, the pleasures or happiness of others. The fact is ... externalities are totally pervasive.<sup>46</sup>

Given the pervasiveness of externalities, as Hunt observes, ‘each man will soon discover that through contrivance he can impose external diseconomies on other men, knowing that the bargaining within the new market that will be established will surely make him better off’.<sup>47</sup> We have seen that once the residents have joined together to pay the industrialist to go elsewhere (as Coase suggests they will do if it is worth it to them), the industrialist has a rational

incentive to make the same threat in other residential areas in order to strike the same bargain again and again. Hunt concludes:

The more significant the social cost imposed upon his neighbour, the greater will be his reward in the bargaining process. It follows from the orthodox assumption of maximising man that each man will create a maximum of social costs he can impose on others.<sup>48</sup>

Assuming, as economists do, that each individual seeks to maximise his or her own welfare, he will do so most effectively by maximising the evil he may do others, who will then pay him or her (as Coase shows) to avoid those costs. Rational maximisers will respond to the perverse incentives implicit in efficient markets, in other words, by creating externalities as nasty as can be. The argument for economic efficiency not only permits such horrors but demands them. 'The economy, of course, is efficient but only in providing misery.'<sup>49</sup>

To summarise: an analysis of the way in which prices coordinate markets shows that in a perfectly functioning market the rational economic person, while intending only his own gain, will be led by an invisible foot to promote the misery of others, even though that is not part of his real intention, which is wholly to benefit himself. This analysis keeps explicitly intact the general structure of Pareto optimality, allocatory efficiency, and free exchange based on willingness to pay. It shows that this structure, which is the basis for the microeconomic approach to environmental policy, must be understood as a formula to maximise misery not welfare.<sup>50</sup>

Why, then, do markets in fact promote well-being? The answer is that individuals, although they are busy and often self-absorbed, are not rational utility maximisers. People bring to transactions a keen sense of fairness, a cooperative spirit, and a bit of compassion. They are motivated not just to maximise their own gain but also to serve society as well. Social science research has confirmed again and again these heartening facts – along with a lot of disheartening facts – about human beings.<sup>51</sup> The reason that the 'invisible hand' operates more often than the 'invisible foot' is that most people are basically decent.

One might reply that the influence of price on demand suggests that people are rational maximisers. People buy less when prices go up, more when prices fall. As Gary Becker has shown, however, even irrational agents are likely to have negatively inclined demand curves. A person who spends money randomly, for example, by buying a dollar's worth of everything in the store, will buy less of an item as its price goes up, because a dollar buys less. Becker gives many examples to demonstrate 'the conclusion that irrational households would tend to have rational market responses to a change in prices'.<sup>52</sup>

There is evidence, however, that at least certain classes of individuals conform to the model of the self-interested maximiser. Social scientists have

inquired, for example, ‘whether exposure to the self-interest model commonly used in economics alters the extent to which people behave in self-interested ways’.<sup>53</sup> Empirical studies show that in experimental contexts, economists behave in more self-interested ways than others, including ‘prisoner’s dilemmas’ in which rational self-interest produces ruin for all. ‘By itself, this evidence does not demonstrate that exposure to the self-interest model *causes* more self-interested behaviour, since it may be that economists were more self-interested to begin with, and this difference was one reason they chose to study economics.’<sup>54</sup> Psychologists such as Thomas Gilovich and Dennis Regan at Cornell, who study abnormal and deviant behaviour, have investigated this question, but I cannot discuss their results here.

The conception that individuals are rational utility maximisers hides from economists most of the important characteristics of market behaviour they need to explain. The functioning of cooperative and hierarchical organisations, such as firms, for example, requires a notion of group solidarity at odds with the commitment to self-seeking individualism. More important, what we may want to understand most are the cultural, moral, and social norms and expectations that make it possible to create wealth in some places but not in others. A great impediment to economic growth in Russia, for example, lies in social and cultural habits that may appear forgiving with respect to adherence to contracts. The reverse appears true in Singapore and in southern China. Why? A fixation on rationality prevents economists from studying cultural differences that are of the greatest moment in understanding and promoting economic growth. From the perspective of neoclassical economics, however, we all belong to the same culture, that of rational utility-maximising individuals trading in markets under given cost constraints.

## EPILOGUE

It is not clear to me whether the arguments presented here attack the presuppositions of mainstream neoclassical economic theory or reflect what is by now the orthodox and conventional position. I think the latter is more likely. I have drawn on well-known and widely accepted views of Ronald Coase, a Nobel prize winner. In symposiums that investigate these views – one published recently – other laureates, such as Douglass North, speak as if the critique I have mounted here is a done deal.<sup>55</sup>

The turning point, I suspect, was the collapse of communism in Eastern Europe. The nations in that part of the world turned for advice to neoclassical economists who found they had nothing to say to them. What they did have to say – some Friedmansque homilies about releasing free market forces and a batch of mathematics about the shape of supply and demand curves – is of no use whatever. These societies needed to build institutions; they needed to know

about how to create legal and political arrangements and cultural habits conducive to productivity. They found in the corpus of neoclassical economics a lot of mathematics that takes this cultural and institutional framework for granted.

In order to have something useful to say to others, many mainstream economists have moved away from the Pareto and toward the institutional frontier. They have been moving away from theoretical and toward empirical forms of inquiry. They have discovered the truth that every important decision, value, policy, or institution is path-dependent and must be understood in terms of values that resonate locally and historically. We have yet to begin to assess why some kinds of ‘paths’ – particular cultural and political memories, expectations, and associations – work better than others.

What shall we say, then, about environmental economists still engaged in developing methodologies for contingent valuation, ‘shadow’ pricing non-use values, and measuring ‘unpriced’ environmental costs and benefits? They may be compared to the Japanese soldiers who were found on islands in the Pacific years after the end of the Second World War, still fighting although the mainland had surrendered and the cause had long since been lost.

When these theorists bring their considerable talents to problems that must be solved, for example, the task of building political, social, and economic institutions for protecting the environment, we may hope for a great deal of progress. These institutional arrangements should capitalise on human instincts, cultural norms, and common values that make virtually all of us care about nature and wish to preserve our common evolutionary and ecological heritage. Good institutions will help us define and defend our moral obligations to nature, to each other, and to future generations. This is ‘welfare’ in an ethically meaningful sense.

## NOTES

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<sup>1</sup> Cowen 1992, p.1.

<sup>2</sup> Freeman 1993, pp.2-3.

<sup>3</sup> US Environmental Protection Agency 1991, p. 5.

<sup>4</sup> Dahlman 1979, p.153.

<sup>5</sup> Randall 1993, p.144.

<sup>6</sup> *Ibid.*, p.145.

<sup>7</sup> Calabresi 1991; quotation at p.1222, citing Nicholas Kaldor, ‘Welfare propositions of economics and interpersonal comparisons of utility’, *Economic Journal* **49**(1939), p.551, n.1.



- <sup>8</sup> Calabresi, *op. cit.*, p. 1222.
- <sup>9</sup> Stigler 1966, p.113.
- <sup>10</sup> Coase 1988.
- <sup>11</sup> Coase 1960.
- <sup>12</sup> Dahlman 1979, p.145.
- <sup>13</sup> Samuelson 1947, p.208.
- <sup>14</sup> Pigou 1932, p.183.
- <sup>15</sup> Stiglitz et al. 1989, p.37.
- <sup>16</sup> Baumol and Oates 1975, p.11, italics removed.
- <sup>17</sup> Coase 1988, pp.25-6.
- <sup>18</sup> Dahlman 1979, p.154.
- <sup>19</sup> Perrings 1987, p.131.
- <sup>20</sup> Nash 1978, p.12.
- <sup>21</sup> *Ibid.*
- <sup>22</sup> *Ibid.*
- <sup>23</sup> Dragun and O'Connor, p.143.
- <sup>24</sup> Prychitko 1994, p.572.
- <sup>25</sup> Rothbard 1956. Quotation at p.2 of the 1977 version.
- <sup>26</sup> *Ibid.*
- <sup>27</sup> See, for example, Sen 1993.
- <sup>28</sup> Common et al. 1994, p.1.
- <sup>29</sup> Stokey and Zeckhauser 1978, p.275.
- <sup>30</sup> Freeman 1993, p.6.
- <sup>31</sup> Randall 1981, p.156.
- <sup>32</sup> Freeman 1993, p.7.
- <sup>33</sup> Pearce 1990.
- <sup>34</sup> Bowes and Krutilla 1989, p.32.
- <sup>35</sup> Kneese and Bower 1972, pp.3-4.
- <sup>36</sup> Freeman 1979, p.3.
- <sup>37</sup> Schkade and Payne 1993.
- <sup>38</sup> Common et al. 1994.
- <sup>39</sup> Hart Research Associates 1993.
- <sup>40</sup> Schkade and Payne 1993, p.289.
- <sup>41</sup> Sen 1977.
- <sup>42</sup> Edwards 1986.
- <sup>43</sup> Stevens et al. 1993, p.309.
- <sup>44</sup> Farber and Hemmersbaugh 1993, p.301.
- <sup>45</sup> Bator 1979, pp.426-7.
- <sup>46</sup> Hunt 1980, pp.245-6.
- <sup>47</sup> *Id.*
- <sup>48</sup> *Ibid.*
- <sup>49</sup> *Id.*
- <sup>50</sup> D'Arge and Hunt 1971.
- <sup>51</sup> For a recent review of the relevant literature, see Kahneman and Varey 1991.
- <sup>52</sup> Becker 1976 ch. 8; quotation at p.163.
- <sup>53</sup> Frank et al. 1993, p.159.
- <sup>54</sup> *Ibid.*
- <sup>55</sup> 'The new institutional economics: recent progress; expanding frontiers', a Symposium

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