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The halfway house: democracy, complexity, and the limits to markets in green political economy

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Abstract

The argument of the Austrian school of economists that markets are indispensable in the face of social and economic complexity is of defining importance for the modern day case for markets. The dominant paradigm in green political economy accepts this view, whilst proposing that markets be combined with a thick layer of democratic, non-market institutions to ensure environmental sustainability.

Closer attention to the relationship between the Austrian and green arguments reveals important implications for both. The Austrian thesis raises significant challenges for the 'halfway house' combination of market and non-market that greens propose. Also, potential responses to the Austrians emerge from green thought. New light is shed upon the problem of complexity and the how it might be addressed by non-market political institutions.

The halfway house: democracy, complexity and the limits to markets in green political economy.¹

1 Introduction

The complexity of modern society has, in much of contemporary political theory, been viewed as posing a challenge to democracy. Democracy requires that a multiplicity of values be accommodated in a way that ensures legitimacy. Political and economic institutions therefore need to enable individuals to act autonomously on the basis of their value priorities. This is the essence of the modern argument for the free market that originates from the Austrian school of economists, in particular Friedrich A Hayek and his mentor Ludwig von Mises. This argument has gained widespread acceptance, even though markets entail a set of widely recognised problems, including inequality, external effects and instability, which prompt the question of what the proper role of markets should be.

Green political economy is concerned with a broad range of questions including these problems of the market, as well as other issues such as human rights and social solidarity. Here, the focus shall be on the green response to the problem of externalities, in particular ecological degradation. Although there is a broad spectrum of views within the green tradition about the proper role of markets, it is to be argued here that a ‘green paradigm’ can be defined that captures the approach of many, perhaps even most, green theorists to the externalities problem. In the green paradigm, markets are given a restricted role, located within the context of a thick layer of democratic, non-market institutions. As is to be explored here, this is markedly different to the pro-free market position of the Austrians as a response to the challenge of complexity.

The Austrian pro-market thesis was developed during what is now known as the ‘socialist calculation debate’ and was initially targeted at those socialists who advocated a planned, entirely non-market economy.¹ It is perhaps for this reason that it receives less attention from green theorists than might be expected. Yet some important parts of the Austrians’ thesis are applicable to the green paradigm. Hayek offered a critique of such a mixed economy, that he disparagingly referred to as a ‘halfway house’ (Hayek 1949: 79). It is the purpose of this paper to assess the challenge posed to green political economy by the Austrians’ work.

Although authors within the green paradigm rarely refer directly to the Austrians’ arguments, green thought does open up some important avenues for responding to the Austrian challenge. The green paradigm causes us to reassess the socialist calculation debate and offers insight into the potential of non-market institutions that are

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overlooked by the Austrians. Hence there is scope for cross-fertilisation between green thought and the socialist calculation debate – two areas that have remained somewhat separate. This promises benefits for both.

Here, the thesis of the Austrians is firstly outlined, with particular attention to the role of complexity in their case for markets. The green paradigm is then defined and its response to this challenge is assessed. The greens' normative objectives of sustainability and participatory democracy are shown to re-shape problems of economic calculation and the role of non-market institutions. The implications of this green contribution to the wider debate about alternatives to the free market shall then be considered.

2 The pro-market argument

The core of the Austrian thesis is that markets are a decentralised means of coordinating a multiplicity of economic actors who hold a variety of objectives. Attempts to replace the market with planning will inevitably fail due to the complex nature of modern economies. The nature of complexity is brought to the fore in the Austrians' discussion of economic calculation as an essential function that can only be performed by the market system. This discussion is to be reviewed here and shown to reveal two preconditions of democracy that form the basis of the Austrian case for markets.

2.1 Defining complexity

Although there is no explicit definition of complexity in Mises and Hayek, six aspects of the concept can be drawn from their discussion of the complex nature of decisions that would face planners in the absence of markets.ⁱⁱ These are as follows:

- i. The number of decisions that need to be made.
- ii. The number of variables needing to be considered in assessing the likely impact of decisions.
- iii. The extent of interdependency of these variables.
- iv. The instability of the environment.
- v. The variety of ends held by individuals in society.
- vi. The variation in the intensity of individuals' preferences for different ends.

Taken together, these different aspects of complexity can serve as criteria for assessing the extent of complexity involved in societal decision-making.

2.2 Three forms of complexity

The Austrians' offer important insights into how, in terms of the six criteria identified above, the calculative functions performed by the market must address a high degree of complexity. This contribution needs to be understood in the context of the important distinction made by Mises between calculation in the productive and distributive spheres of the economy. Productive calculation involves choosing a 'target set' of goods to produce and how to produce it. The challenge of distributing the goods once they have been produced is, as Mises argues, a separate problem

(Mises 1935: 90). According to the Austrians, both forms of calculation are only achievable by means of the market. Although the market can perform the productive and distributive forms of calculation simultaneously, they are logically distinct functions.

Forms of Calculation		Objectives	
Sphere of economy	Form of complexity	Objective	Sub-objectives
Productive	Technical	Efficiency	Local knowledge/ Coordination
	Economic		
Distributive	Value	Autonomy	Preference satisfaction/ Fairness

Table 1. The Austrian treatment of complexity

The focus of the Austrians is upon non-market calculation in the sphere of production that (unlike non-market distribution) is considered by Mises to be a defining feature of socialism. As shown in Table 1, three forms of complexity emerge in the productive sphere: technical, economic and value. Technical complexity is faced when calculating the factor requirements for producing given quantities of goods with given productive technologies (Mises 1935: 129; Hayek 1976: 117). These requirements are defined as ratios between physical quantities of different factors and can be calculated without knowledge of market exchange values. Economic complexity characterises the producers’ choices between alternative methods of production. Value complexity refers to the wide variety of ends that motivate consumers that in turn motivate producers in their choice of what to produce. The productive choice, for example, of whether to make chairs out of plastic or wood must in part depend upon the relative preferences of consumers for these materials and their alternative uses, as well as their relative availability. Value complexity is of course a challenge that also arises in the distributive sphere of the economy.

Both economic and value complexity emerge from the Austrians’ work as a challenge to democracy. In relation to each, the market fulfils a dual objective that is a precondition of democracy. Failure to meet these objectives leads to what Hayek famously describes as the ‘road to serfdom’. Firstly, in relation to economic complexity, we can identify the ‘efficiency pre-condition’ of democracy. This means achievement of a balance between the utilisation of local knowledge through decentralisation whilst facilitating economy-wide coordination. The market achieves this dual objective, by allowing producers to make decisions on the basis of “their immediate surroundings” (Hayek 1949: 84) whilst, in the process, establishing prices that convey information to economic actors, enabling them to fit their “decisions into the whole pattern of changes of the larger economic system” (ibid: 84). It is difficult

to compare different economic alternatives while they are expressed in terms of different, incommensurable values. Monetary prices are a commensurable unit of measurement in terms of which alternatives can be compared. Whilst they may not fully capture all aspects of value, prices are indispensable as “aids to the mind” (Mises 1935: 102). Markets also generate an incentive for producers to discover new, more efficient and effective ways of satisfying demand.

The Austrians maintain that, in a system of planning, each of these two parts of the dual objective can only be achieved at the expense of the other. Coordination can be achieved only through centralisation that can result in a lack of accountability and neglect of the extensive local knowledge of producers and consumers. Conversely, attempts to decentralise result in a loss of society-wide coordination. In the absence of the market, innovation would be stifled.

The ‘ethical pre-condition’ of democracy is to ensure that value complexity is addressed by granting priority to individual autonomy. For the Austrians, this means securing the right of individual consumers to engage in market transactions free from all but the most necessary and consistently applied forms of state intervention. This principle is often referred to as ‘consumer sovereignty’ and it entails the freedom of individuals to choose those goods that accord with the satisfaction of their subjective preferences. For the Austrians, this ethical justification for markets as an essential feature of the liberal order stands independent of the individual ends that might shape these preferences.

3 The green paradigm

By the 1980s, the Austrian efficiency arguments for markets were generally viewed as having triumphed in the socialist calculation debate. Many on the left came to accept that a role for markets must necessarily be preserved in any alternative to the free market. This conclusion has also been widely supported within the green tradition. It is possible to identify a significant, if not dominant, school of thought amongst greens, which accepts the need for markets, whilst arguing that they need to be situated within the context of a thick layer of non-market institutions for securing a range of social objectives, including environmental sustainability. This envisaged role for non-market institutions is more substantial than in the present-day economic systems in countries such as the U.K.

This view is referred to here as the ‘green paradigm.’ It is recognised that not all political theorists and economists whose work might be described as ‘green’ are included within this paradigm. There is a great deal of variety amongst the models of political economy proposed by ‘green’ theorists and the ambiguity of this very label is widely recognised. One concept that does seem to be definitive of distinctively ‘green’ thought is a concern for achieving environmental sustainability, though the meaning of this concept itself is strongly contested. Various definitions of sustainability are defended, ranging from ‘strong’ to ‘weak’ sustainability. Writers within the green paradigm subscribe to strong sustainability, according to which the level of natural capital (measured either in physical or value terms) is kept constant. Weaker versions of the concept grant that “depletion of natural resources and degradation of ecosystem functions is acceptable provided that sufficient human-made

capital is accumulated to substitute for these resources and functions” (Krishnan et al 1995: 98).

As well as offering differing interpretations of the normative objective of sustainability, green theorists also vary in terms of their economic proposals for achieving the objective, ranging from free market environmentalism to eco-socialist models where the market is either removed or has a highly limited role. In between these two extremes, different systems seek to combine markets with a variety of different forms of intervention in the market. It follows that there is no single definitive ‘green model’ of political economy. The purpose here is to define a broad paradigm to capture the common ground held by a significant number, though certainly not all, green theorists. Writers who do fall within the green paradigm include Jonathan Porritt, Herman Daly, Michael Jacobs and John Barry. The paradigm is not intended to capture all features of the work of such writers. For example, some have proposed workplace democracy or worker ownership schemes that are not to be treated here as definitive features of the paradigm.

The green paradigm is to be defined in terms of three key features. The first is adoption of a strong conception of sustainability. The next two features are political economic features, which concern, respectively, the state-market and state-citizenry relationships. The former is a view of the market as a necessary means of achieving an economic allocation of resources whilst operating within limits that are established by non-market institutions to ensure (strong) environmental sustainability. Within the green tradition, two distinct approaches are often identified concerning the role of markets in achieving sustainability, usually referred to as ‘environmental economics’ and ‘ecological economics’. Some of the differences between the two schools are further explored below. Here, we need to note that environmental economics is typically twinned with a weak conception of sustainability and hence differs from ecological economics in terms of the form this intervention should take.

Environmental economics aims to achieve sustainability by the indirect means of financial instruments such as taxes and subsidies. Ecological economics, by contrast, places economics within the systemic context of ecology. It therefore questions the possibility of ensuring sustainability solely by means of internalising environmental costs into the market mechanism. Ecological economics emphasises that the planet is a thermodynamically closed, finite system and hence environmental limits must be fixed prior to the occurrence of market exchange. Of course, as Jacobs suggests, this ‘ecological’ approach can be combined with the policy instruments of environmental economics (Jacobs 1991: 151-2). Authors in the green paradigm tend to take this pragmatic approach to the question of the suitability of different forms of intervention in the market. They are thus best distinguished from the environmental economics school in terms of their objective of strong sustainability, although this does tend to lead them towards an ecological economics framework.

An early and very influential ecological economist is Herman Daly. He proposes a general economic framework that seeks

“to combine micro freedom and variability with macro stability and control. This means, in practice, relying on market allocation of an aggregate resource throughput whose total is not set by the market, but rather fixed collectively on the basis of ecological criteria of sustainability and ethical criteria of stewardship” (Daly 1987: 7).

Such criteria of sustainability constitute constraints that both the market and the state must operate within.

The third key feature of the green paradigm, also evident in the above quotation from Daly, is that there is a need for the sustainability limits to be established collectively through a democratic procedure in which the citizenry become engaged. As writers within the green paradigm make clear (Porritt 1984: 134; Daly & Cobb 1989: 172; Barry 1999: 119-121), participatory democracy is held to be an important means of establishing and sustaining a green economy. The bureaucratic and centralised approach of environmental economics to policy formation has been criticised for its neglect of public participation.ⁱⁱⁱ The financial instruments that they propose require a monetary cost to firstly be assigned to the external environmental effects that they aim to internalise. Yet the methodology that environmental economists adopt to establish such a cost is disputed and some argue that it is fundamentally flawed. This raises the question of how such calculation can be conducted in a manner compatible with democracy. Unlike the green paradigm, environmental economists do not consider the potential role of democratic, non-market institutions in such decisions.

4 Economic complexity and the Austrian case against intervention

The inclusion of the market within a halfway house model might be considered by socialists and greens to make it less vulnerable to Hayek's 'road to serfdom' argument. After all, such a model allows for free markets in the distributive sphere of the economy and for markets to operate, within limits, in the productive sphere. However, from the Austrian perspective, the halfway house model still faces a profound problem of complexity. The Austrians provide a critique of socialist mixed models that, like the more recent green paradigm, place limits upon the market in order to achieve certain normative objectives that cannot be achieved by the market alone. These socialist models emphasise equality of income and social ownership rather than environmental sustainability, although the Austrian critique can be extended to other versions of the halfway house such as that of the green paradigm.

Whereas in non-market socialism, the problem of complexity arises from the absence of markets, for the 'halfway house' it emerges from the challenge of effective market intervention. Within the green paradigm this means setting taxes or quotas upon the use of scarce natural resources, or granting subsidies to promote more sustainable productive practices (see, for example, Porritt 1984: 133). Such policies are emphasised by the Austrians to inevitably require a significant degree of centralised state decision-making (Hayek 1949: 133-4). Setting such taxes requires detailed knowledge of supply and demand in the economy while its negative, a subsidy, requires intervention in capital markets. In the face of economic complexity, Mises' view is that, as Ioannides puts it:

“(An) intervention in the free workings of the market system can never ‘calculate’ the full consequences of its application. Even if the government is in a position to assess the immediate consequences of such action it can certainly not calculate with certainty its repercussions on the whole of the market system” (Ioannides 2000: 63).

The Austrian argument is echoed by contemporary political economists in their analysis of attempts to establish a mixed economy in Eastern Europe and in the Soviet Union under perestroika. Kornai argues that such attempts to combine market and plan result in competition becoming compromised by state subsidies that necessarily feature in the 'halfway house.' Subsidised firms face only a 'soft budget constraint' because they know that the state would bail them out should they face insolvency (Kornai 1993: 140-5). A related point is that protection of existing firms creates a barrier to entry for new firms. This is what Hayek meant when he said that intervention could stifle the very competition that spurs entrepreneurial responsiveness to the ever-changing conditions of demand and supply.

Peter Boettke, in his critique of the interventionist nature of the state in the Soviet Union under perestroika points to the core problem of economic change that Soviet planners continued to face, even as their economy started to incorporate a greater role for the market. "(Information) gathered yesterday may be irrelevant for decisions today because of changing conditions" (Boettke 1993: 92), he writes, emphasising that intervention in the market faces an inevitable problem of anticipating the likely outcome of an economic decision. There is a danger of "(Ignorant) or haphazard intervention" that "will simply lead to further destabilization and exacerbate the problem it sought originally to correct" (ibid). For Boettke and Kornai these problems mean that there are inherent difficulties in establishing a stable halfway house. Kornai's bleak conclusion is that there is "no Third Way available between capitalism and socialism" (Gamble 1996: 69).^{iv}

In the field of environmental policy, the arguments of free market environmentalism exhibit a similarly Austrian influence (e.g. Anderson and Leal 1991). Given that it is impossible to assimilate knowledge of "all of the possible variations in an ecosystem" (ibid: 170) they view the task of achieving effective non-market intervention to be hugely problematic. For free marketeers, the cause of a range of environmental problems is not the market itself but the absence of clearly defined property rights over environmental resources.^v Where public institutions manage common resources, it is argued that officials do not have the same incentive as private owners to manage the resource effectively. Furthermore, private ownership rights should be accompanied by a responsibility to pay for the costs of environmental damage (ibid: 25).

This contemporary version of the Austrian argument highlights the complex nature of economic decisions facing policy makers in a green economy. Yet the purpose here is not to provide a detailed examination of this case against intervention in the market. Instead, the aim is to highlight how the green paradigm can serve as the basis for a response to the Austrian argument by casting the complexity problem in a new light.

5 Greens and the scale of environmental externalities

The green paradigm makes a strong case for the necessity of intervention in the market by providing a thorough theoretical and empirical analysis of modern environmental problems. Although this work is not usually targeted at the Austrians in particular, it constitutes an important counter-weight to the Austrian approach.

It should firstly be noted, however, that there is some important common ground shared by the Austrian school and ecological economists. Firstly, Austrians, like ecological economists recognise the incommensurability of the heterogeneous array of values in society (including environmental values) (Greenwood 2006). Secondly, for both, it is nevertheless possible, at least in principle, for market prices to incorporate this array of values to an extent that is satisfactory. Where the two schools differ is in the scale of market regulation that they consider to be required to achieve this. The green paradigm is characterised by a focus upon this question of the scale of environmental problems and the degree of regulation that they require.

Green theory emphasises two features of environmental problems that give cause for market intervention. Firstly, environmental protection is often a public good, meaning that its benefits are available to everybody, regardless of whether or not they contributed to its cost. This creates an incentive for each individual to ‘free ride’ upon the choice of others to meet the cost of environmental protection, whilst declining to do so themselves. A second common feature of environmental problems is that they are often externalities, meaning that market exchange cannot, in itself, ensure that their costs or benefits are reflected in exchange values. A well known example of a negative externality is pollution. The market in itself cannot ensure that the cost of this activity is borne by the individual or firm responsible for it. Solutions to such negative externalities must, by definition, come from outside of the market. Note that external effects are not necessarily public. The cost of pollution, for example, might fall upon the owner of private land for example. It follows that the problems of public goods provision and externalities can be logically distinguished.

The work of Hayek is indicative of the general tendency in the Austrian school to underestimate the significance of these issues that are of concern for both ecological and environmental economics. Hayek does acknowledge the need for the state to provide some public goods (Hayek 1960: 222-4) and also refers to the problem of externalities (or “neighbourhood effects”) (ibid: 369). Yet his brief treatment leaves some key questions unanswered. As De Jasay puts it, he mentions public goods theory only “cursorily” (De Jasay 1996: 111-2) and the role of the state is left “open ended” and “indeterminate” (ibid: 113). Similarly, Hayek makes only brief reference to the problem of negative environmental externalities (Hayek 1944: 29; 1960: 369) where he acknowledges that alternative forms of property ownership might be appropriate for certain natural resources. Had he understood the potential scale of contemporary problems such as climate change and biodiversity loss, Hayek might have recognised that a large degree of regulation is required to address them. Yet this can of course only be a matter of speculation.

More recent free marketeers such as Anderson and Leal, whose work exhibits a strong Hayekian influence, also fail to give adequate acknowledgement of the scale of current ecological problems. Their work provides detailed treatment of a number of topics such as over fishing and waste disposal but does not acknowledge the overall extent of such problems on a national and international scale. Anderson and Leal emphasise the contested meaning of sustainability and suggest that it should ultimately take second place to the principle of consumer sovereignty (Anderson and Leal 1991: 168-72).

For greens, this question of the overall scale of ecological degradation is of crucial importance for assessing the potential benefits of intervention in the market. These benefits might, after all, outweigh the negative consequences of attempts to regulate the market that are highlighted by the Austrians. A case in point to highlight such a green argument might be the London congestion charge. A £5 fixed charge^{vi} for driving in central London was criticised as being a blunt instrument before it was introduced in 2003. Undesirable effects were anticipated, such as penalising some relatively low paid workers who need their cars to perform important work in central London and an increased congestion in the areas immediately outside of the zone. However, a very strong case can be made that the benefits in terms of reduced car use in London resulting from the charge have outweighed these disadvantages.

This kind of argument concerning the potential to improve net economic outcomes through market intervention suggests that the halfway house might be a possible route to establishing the two democratic preconditions of autonomy and efficiency. This might seem to lead us to the conclusion of Tomlinson in his discussion of market socialism that: “planning and markets can and have been mixed in a variety of ways, ways that can be sustained without leading down the road to serfdom” (Tomlinson 1990: 122).

6 Free market solutions?

The free marketeers’ proposal for an extension of environmental property rights does not offer the kind of straightforward avoidance of the economic complexity problem as is supposed, for example, by Anderson and Leal. For it must still face complex issues concerning how property rights are to be defined and allocated for a vast range of ecological services.

Pennington distinguishes the free market environmentalist approach to defining property rights from both the ecological and environmental economics schools. These latter approaches, he notes, involve a significant element of centralised decision-making by the state (Pennington 2003: 57-9). The ecological school, typified by the work of Herman Daly, proposes that the state implements quantity rationing of ecological services, meaning that quantitative environmental limits are fixed prior to the commencement of market exchange. Daly proposes that permits to use ecological services within these fixed limits be then allocated by means of an auction. Environmental economics, by contrast, favours price rationing, with the state firstly setting taxes or subsidies on the use of ecological services where necessary. The quantity of ecological services used then adjusts to their price.

In a Hayekian critique of these two approaches, Pennington emphasises that knowledge concerning different externalities and how property rights might best be specified to address them is dispersed across society (ibid: 57; 61). Property rights would, he infers, best be defined through a market process of negotiation and competition between different resource owners themselves in order to utilise this local knowledge. The role of the state in such a ‘free market’ system would be to specify general ‘rules of just conduct’ for negotiating parties (ibid: 61). This free market environmentalism highlights the dynamic nature of environmental problems and,

following Hayek, emphasises that property rights need to be adapted through a process of evolutionary change.

Yet the legal character of property rights means that they must be sanctioned by the state. Each change in property rights, or decision to leave the law unchanged in response to new circumstances, requires state consent. Even in the free market system, the state must at least agree upon the procedures through which property rights are to be defined. Given that the market itself, by definition, cannot address externality problems, the state needs to be sure that the property rights system that is established will satisfactorily address them. This involves choosing between a number of possible property rights 'regimes', ranging from systems of individually-held private property to various forms of collective ownership (Bromley 1991: 21-39). Defining an appropriate regime requires non-market information and does not easily side-step the challenge of complexity that characterises many decisions concerning the allocation of environmental resources.

A further aspect of the challenge of complexity that governments face in a market system is that of unequal purchasing power. As Dragun puts it, in a market system "property rights are a direct function of existing regimes of power in society" (Dragun 1983: 673). Even where property rights might initially be allocated in a way that is agreed to be fair, new inequalities can soon develop. Here emerges the problem of monopoly that, as the Austrians acknowledge, is a potential problem in any kind of market system. Monopolies can create barriers to entry for newer, less established firms (Hayek 1979: 84) a problem that could arise in Daly's permit auction as well as a free market model. In Daly's system this might be preventable by some form of non-market intervention such as retaining some permit allowances for new entrants, though this might itself create inefficiencies by penalising more efficient, established firms. Here, once again, markets face problems of complexity from which there is no straightforward escape.

7 Sustainability and complexity

By ensuring that economic activity remains within sustainable limits, ecological economics rules out a vast array of unsustainable productive methods. Of course, trade-offs remain in the sustainable economy between alternative uses of economic resources and so the problem of productive calculation remains a complex one. In a sustainable economy, different kinds of complex decision, not previously considered, may come to the fore. Yet the sustainability principle does mean that the number of production possibilities is reduced.

For ecological economists, the behaviour of economic actors is not the only source of complexity in modern society. Ecosystems themselves are complex and the ecological impact of future activities is characterised by uncertainty and associated risk. It is emphasised that an unacceptable degree of risk arises from many of the productive technologies that have been developed by the contemporary market economy, with examples ranging from nuclear power to genetically modified crops. This risk concerns possible future ecological impacts that are external to market calculation. On these grounds, the precautionary principle can be adopted, an approach that rules out the use of certain productive technologies altogether because of the risk that they

involve. This principle, which is generally favoured within the green paradigm, once again reduces the number of production possibilities that are considered legitimate by the green paradigm.

Thus, rather than treating complexity as a category beyond the scope of analysis, green thought shows that there is potential for re-shaping calculation in the economic sphere and addressing complexity through decisions concerning the relationship between humanity and nature. The reduction of production possibilities in the green paradigm due to the sustainability and precautionary principles is in contrast to the free market approach which offers no such guaranteed limits to economic activity and considers demonstrably or potentially unsustainable alternatives to be legitimate and feasible. Any efficiency gains of the free market model need to be balanced against the benefit in the ecological model of ensuring that unsustainable options are avoided.

8 Complexity and knowledge

Throughout Hayek's work there is a strong scepticism about the capacity of centralised, non-market institutions to acquire adequate economic knowledge for effective market intervention. He emphasises that economic knowledge is dispersed across space and time. A decentralised system is therefore required that enables the individual producer to make autonomous decisions in response to changing circumstances. To some extent, the green paradigm shares Hayek's doubts about centralised planning institutions (O'Neill 2004: 434). This partly explains why the green paradigm retains a role for the market and typically shows a strong sensitivity to the importance of local knowledge. This is evident, for example, in Barry's conception of 'collective ecological management' which combines coordination of production through the market (Barry 1999: 118) with a significant role for non-market institutions operating at different geographical scales. For certain kinds of environmental problem, such as local forest management for example, decentralised non-market institutions are recognised as most appropriate within the green paradigm. Yet the Green movement also identifies environmental problems requiring the kind of planning that can be "devised and carried out only by centralised political structures" (Dobson 1990: 184). The need for centralised institutions to address global environmental issues such as climate change is increasingly being recognised, even in today's global economy, where the market has a much freer role than is proposed by the green model.

Actually existing non-market institutions on both a national and sometimes multinational scale have, to some extent, developed certain knowledge gathering and environmental planning capabilities of the kind that is envisaged by the green paradigm, even if they do not go as far as the greens propose. As Jacobs explains, these institutions have a role in the policy making process. This includes setting "targets for the key environmental indicators" that "define the level at which environmental capacity is to be protected" (Jacobs 1991: 119).

Sustainability limits have been established for a variety of different ecological services.^{vii} A sustainability limit is a level of an environmental variable beyond which a given ecosystem function is substantially impaired or disabled. The impairment, and the limit which has been transgressed and led to the impairment, may be described in

scientific terms. But the decision as to whether to transgress the limit, or whether it is 'acceptable', is unavoidably political. The establishment of sustainability limits in terms of 'substantial impairment' is a scientific problem. It is one that can be resolved in some cases. For example, the UK government has been able to define sustainability standards for SO₂ according to the effects of SO₂ pollution upon ecosystems and human health (Ekins & Simon 2001: 7). The normative and political component is inevitably present in terms of whether the impairment is acceptable. Some sustainability limits might be difficult or impossible to identify, especially given that ecosystems can be subject to dynamic, non-linear change and are complex systems which react unpredictably to disturbances. Aggregating data to measure ecological change can also be problematic because of what Hayek refers to as the 'particular circumstances of time and place.' But we do know that, in order to avoid a certain level of ecosystem impairment, a limit does exist for the causal variables involved. For example, in order to avoid a given increase in mean global temperature, scientists know that there is a certain level of greenhouse gas emissions that must not be exceeded over a certain time period. They may not have precise knowledge of this limit but they do know that it exists.

The work of Hayek typifies the reluctance of the Austrian school to admit the need for and possibility of such centralised knowledge gathering in order to address externality problems. Hayek does acknowledge that "there are some facts concerning probable future developments which the government is more likely to know than most of the individual owners of natural resources" (Hayek 1960: 371). But nowhere does Hayek acknowledge the economic importance of such scientific information. Such physical data may be only 'technical' in the sense defined above but it still has an important role in economic analysis (O'Neill 2004: 444). Physical indicators are now used, for example, by the OECD to aid environmental decision making (Nyborg 2000: 394). These developments in the environmental field supplement the work of writers who offer other cases of economically relevant knowledge that is gathered through non-market channels. Hilary Wainwright has highlighted the collective nature of the knowledge of workers, which is of a kind that is often overlooked by the market^{viii}. John O'Neill has pointed to the importance of non-market institutions such as scientific associations as a source of knowledge^{ix}. Such non-market institutions share a connection with the problem of productive calculation. Yet the ecological aspect of economic calculation is of notable significance in being concerned with managing resource scarcity, the defining feature of any economic calculation problem. Not only does it demonstrate the potential of non-market channels for gathering knowledge about resource usage but also involves the technique of distilling this information in the form of indicators. This provides a certain degree of simplification of economic choices facing producers and policy makers whilst remaining faithful to the essentially incommensurable nature of different indicators of sustainability. They offer guidance on the ecological cost of productive practices and thus serve as a spur to innovation in those areas where improvements are most needed. Such indicators were developed after the work of Mises and Hayek who held that monetary prices alone could perform this guidance function.

9 Value complexity and democratising calculation

In the free market, the ecological impact of economic activity is established by the individual decisions of the multiplicity of firms and consumers. In the green paradigm, environmental limits are established through a political decision. As Beck comments: “the intrusion of ecological concerns into the economy opens the economy to politics” (Beck 1997: 127). This shift results in complexity being displaced from the economic to the political sphere.

The Austrians and greens are in agreement on the essentially normative, hence political, character of intervention in the market. Both recognise that decisions concerning the use of ecological services must consider a plurality of incommensurable values. Here, both Austrian and ecological economics contrast with the ‘orthodox,’ ‘neoclassical’ school of environmental economics which reduces the task of achieving sustainability to a purely technical one in which environmental values are assumed to be objectively measurable in monetary terms (Mulberg 1992: 335-6). Mulberg’s suggestion that this is “a negation of the democratic political process” (ibid: 340) reflects the general view within the green paradigm about the orthodox approach.

The green paradigm favours addressing the ethical character of such decisions within the political sphere (Dryzek 1997: 149; Barry 1999: 108). For Hayek, by contrast, an increase in the scope of political power means “everything tends to become a political issue for which the interference of the coercive powers of government can be invoked” (Hayek 1979: 138). The Austrian conclusion is that free markets should be left to operate mainly independently of politics to serve as a neutral means of facilitating individual autonomy.

Where the Austrians differ from the greens is in holding that the normative contestability of economic choices is decisive as an argument against all but the most minimal forms of state intervention in the market. Here, the green paradigm offers some important responses to the Austrians. Firstly, as discussed above, some form of non-market decision making is required in order to establish a principle of sustainability. Free market environmentalists are concerned that this involves an excessive reliance upon “omniscient, benevolent experts” (Anderson & Leal 1991: 169). But the challenge of defining the normative, contestable concept of sustainability arises in any form of economy, including contemporary society (Zolo 1992: 63) and cannot be simply resolved by recourse to the market.

For Zolo, a reduction in political complexity is needed and this can only be achieved by a concentration of power (Zolo 1992: 56) that is incompatible with both the liberal and more participatory brands of democracy. It is thus complexity itself and not the presence or absence of markets that, from his realist perspective, are the source of the challenge to democracy. The green paradigm opens up two routes for responding to the realist pessimism as well as to the Austrians. The first is to argue that it is possible to achieve a certain degree of public consensus on the need for environmental sustainability as a normative objective. Second is to design political institutions to accommodate divergent values. Of course, in practice, the two proposed approaches are often combined.

With regard to the first route, the green paradigm does not suggest that the challenge of democracy and complexity can be entirely removed by a normative consensus. This would be to neglect the contested nature of the concept of sustainability and the need for allocative decisions involving normative judgement even when a definition of sustainability has been agreed. However, it is recognised that a certain degree of consensus is required by the green paradigm, including a general acceptance of at least the weaker version of the sustainability principle. It is suggested by Barry, for example, that the “simplification” of economic life in the sustainable economy “would enhance the prospects for democratic decision-making and democratic norms throughout society as a whole” (Barry 1999: 211). Agreement upon ethical doctrines, in Zolo’s terms, reduces complexity. It enables decision options to be pre-selected, allowing for speedier, more coherent choices (Zolo 1992: 31). It would seem that even a certain degree of consensus can start to bring such benefits and it is in this sense that the green paradigm envisages as possible some simplification of the choices facing political institutions. This becomes more achievable as the scale of ecological problems becomes more widely recognised.

Nevertheless, there is a strong recognition in the green paradigm that political institutions need to be designed to accommodate a diversity of values and perspectives and this is the second channel open to the greens in response to the Austrians. As Barry argues, the heterogeneous array of valuation criteria in a green economy can be opened up for public judgement within the political sphere instead of relying upon individuals’ decisions in the market to fully account for them:

“Rather than seeking a single commensurable unit (money values) upon which to base environmental decision-making, we ought to search for a common framework within which all valuations can be articulated. That is to allow the plurality of environmental values to be articulated, and then assessing them via a public judgement of their normative underpinnings, perhaps through voting on them” (Barry 1999: 149).

This is not to deny that market prices have a part to play in environmental decision-making but rather to suggest that those values of society that cannot be captured by market exchange values sometimes require expression through a political process. A number of approaches to public planning and resource allocation incorporate participation and seek to facilitate this political articulation of values. Ecological issues have been an important spur to such developments that have been strongly supported within the green paradigm.

There is of course no guarantee that increased participation will mean moves towards environmentally sustainable policy choices (Dryzek 1992: 38) but it does encourage mutual understanding, offering the prospect of reducing the intensity of disagreement. The Austrians do not consider the potential of such forms of democracy and instead propose a thin political sphere. Hayek captures this Austrian view when he describes democracy as “basically a negative value, a procedural rule which serves as a protection against despotism and tyranny” (Hayek 1979:133).

As well as having to address value complexity, deliberative approaches are also faced with economic complexity in the enlarged political sphere of the green paradigm. The democratic precondition of balancing coordination with the utilisation of local

knowledge becomes a challenge for political institutions. This is the point developed by Mark Pennington in his Hayekian critique which questions “the assumption that a participatory/ deliberative democracy can deliver an appropriately ‘integrated’ and ‘holistic’ set of environmental decisions” (Pennington 2001: 177). The implication is that the reduced role of markets would mean that the guidance function that they perform would be unfulfilled. Markets facilitate the establishment of the appropriate size of organisations (ibid: 176) and integration between different decision-making spaces and scales (ibid: 179). Although this argument casts aside the problem of monopolies and oligopolies that can arise in markets, there is certainly, at present, a need for further investigation into this question of how far deliberative institutions can replace this coordination function of the market. This is an important challenge for the green paradigm.

Green thought thus makes an important contribution to the debate concerning the relationship between economic complexity and democracy by showing that a certain amount of economic complexity can be displaced to the political sphere. There is scope for exploring interesting, subsequent questions such as the degree of consensus required for the development of such democratic political institutions and the extent to which they can be a substitute for the market coordination function. Such questions are not even recognised by Mises and Hayek, whose discussion of democracy is confined to a conventional, representative model. Participatory, non-market institutions are viewed only as exacerbating, rather than addressing, the problem of complexity. This leaves untouched a potentially significant counter-argument to the Austrian scepticism about enlarging the political sphere.

10 Incentives problem

The prior discussion shows that the implications of sustainability and the capacity of non-market institutions all cast the problem of economic complexity in a new light. These features of the green paradigm are a source for a potential response to the Austrians. Yet there is a further important aspect of this theme of democracy, complexity and markets that tends to be overlooked by both the Austrians and the advocates of a halfway house model. This is a point made by Marxists concerning the market itself being a potential source of complexity. It is pointed out that markets create incentives that can undermine the implementation of democratic objectives. There is a ceaseless pressure upon firms to make a profit and achieve the capital accumulation that is required to ensure their survival (Ollman 1998: 151). Such an incentive can conflict with environmental policies of regulation and intervention that aim to pass on environmental costs to producers. This conflict of incentives has been evident in the difficulties involved in defining and implementing the Kyoto treaty on climate change for example, where the vested interests of certain industries have prevented anything other than very slow progress. In such cases, incentives from the economic market can affect political outcomes through a process of lobbying politicians, corruption or even migration of capital. There is thus a built in tendency for a halfway house model to go back towards a free market capitalist one (Arnold 1987). It can therefore be viewed as an inherently unstable means of attaining certain normative objectives where they conflict with the profit motive.

11 Conclusion

The Austrians' work provides a useful insight into the problem of complexity that must be faced by models of political economy such as the green paradigm. The greens make an important response by moving away from the consumer sovereignty principle and towards the normative objectives of sustainability and democratic co-operation. Furthermore, developments in ecological theory give cause for questioning Hayekian scepticism about the knowledge gathering capability of non-market institutions. Such arguments might even be used for extending the scope of non-market institutions beyond that envisaged by the halfway house, as was proposed by some of the socialists towards whom Mises' argument was initially directed. This is a route that should perhaps not be ruled out. While such a position must still face the problems of value and economic complexity, it holds the prospect of avoiding the problems associated with market incentives that a halfway house model must address.

Whatever model is to be the preferred alternative, it is clear that the green paradigm offers the potential for common ground with different elements within the socialist tradition. For example, the development of participatory political theory represents an "important convergence between the left and the Greens" (Mulberg 1992: 340). The calculation debate thus becomes broadened to incorporate the political as well as the economic sphere. Such common ground can provide an important part of the response to the Austrians, whose pro-market case is widely assumed to be an irresistible one, even if their narrow conception of the political actor is not. Yet such developments require closer engagement with the Austrian arguments. Rather than viewing their argument as one that can be avoided on the grounds that it is based upon questionable philosophical premises, it would be better to treat it as a spur to further research concerning the potential capabilities of democratic, non-market institutions in the face of economic complexity.

12 References

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ⁱ See, for example, Mises' 1920, an important, early contribution to the debate.

ⁱⁱ Points i and ii are also referred to by Zolo (1992: 126) and point iii is included in his definition of complexity (Zolo 1992: 3).

ⁱⁱⁱ See, for example, Barry (1999: 146).

^{iv} Greens could argue that the tax and subsidy policies used in actually existing ‘free market’ economies, for example state subsidies of the nuclear industry, already influence environmental outcomes and so in this sense elements of the halfway house already exist.

^v Hayek makes this point (Hayek 1960: 368).

^{vi} In 2005 the charge was increased to £8.

^{vii} This is made clear in the work of Ekins & Simon (2003).

^{viii} See Wainwright 1994, especially chapter 6.

^{ix} O’Neill 1998, chapter 11.