

THE CHALLENGE OF ENVIRONMENTAL GOVERNANCE: ECOLOGY AND THE NEED FOR A HETERODOX POLITICAL ECONOMY

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Australia suffered from an unwelcome example of climate change early in 2016, with storms threatening homes and businesses along the coast in Sydney. This was far from being an isolated incident, and extreme weather conditions and the effects of rising sea levels have become commonplace, with few countries untouched. Climate change is no longer a concern only for future generations, but is now a present-day issue.

Questions of environmental degradation are hardly new, however. One of the earliest environmental books – Rachel Carson’s *Silent Spring* – was published over 50 years ago (Carson 1962). The Club of Rome report *Limits to Growth* was published in 1972 (Meadows *et al* 1972). A debate that has been ongoing for half a century almost certainly must revolve around political questions rather than technical issues. By the same token, technical solutions are likely to be insufficient. The question to address is perhaps not so much what to do about the environment, but rather why so little has been done.

The main policy tools for addressing environmental issues are drawn from orthodox economics theories themselves going back many years. However, this body of theory has itself come under increasing pressure. The inability of the profession to predict the crisis of 2008 has led to questions about the veracity of the discipline of economics, as witnessed

Mulberg, J. (2017)

‘The Challenge of Environmental Governance: Ecology and the Need for a Heterodox Political Economy’

Journal of Australian Political Economy

No. 80, pp. 129-54.

by the subsequent social protests against austerity measures, and there have also been protests over climate change. Current environmental policy has also come under attack on ethical grounds from religious leaders, with Pope Francis claiming it leads to speculation (Francis 2015), and the International Islamic Climate Change Symposium calling for 'a fresh model of wellbeing, based on an alternative to the current financial model which depletes resources, degrades the environment, and deepens inequality' (2015: sec. 3.3). Furthermore, the economics discipline – somewhat uniquely – has come under criticism from its own students worldwide.

This article will investigate the problem of environmental governance. It will question the scientific status of the discipline of economics, and suggest that economics is best viewed as a form of political governance. It maintains that the discipline performs an ideological function to enable justification of what are essentially political decisions. The article addresses the challenge of Herbert-Cheshire and Lawrence of incorporating poststructuralism, in particular the work of Foucault, into a coherent political economy which remains both critical and contains clear guidance for social action (Herbert-Cheshire and Lawrence 2002: 137). It will also, following Rosewarne, attempt to outline how this approach can be used to 'address the salience' of mainstream economic theory, and to 'articulate the conceptual ... vantage point' of the critique and 'identify and critically (engage) with ... social forces' that can transform our future towards sustainability (Rosewarne 2002: 180).

Rather than employ orthodox economics to develop policies on environment, the article will attempt to show how ideas from the green movement, such as discontinuity and tipping points, social limits and defensive expenditures, and holistic approaches as opposed to individualistic methodologies, could be employed in the formation of a Green political economy, which the article suggests is what is required rather than slight changes to current environmental policy. Orthodox economics could be viewed as an example of what Habermas referred to as the 'scientization of politics', whereby political questions are re-framed as scientific debates, and removed from the political agenda (Habermas 1969: ch. 6). The article employs the work of Foucault to argue that the discipline of economics and the discourse it promotes form part of a power network and are a major part of modern governance. For Foucault it is the discourse which has replaced domination as the main

form of contemporary power, and political economy is a major discourse legitimising the social order.

In order to investigate the current discourse within disciplines, Foucault suggests we look to their past to construct an 'archaeology'. In particular, we should look for discontinuities, for 'ruptures' in the development of the discipline, in order to unravel claims for universal truth. This article revisits the socialist calculation debate of the 1920s and 1930s to demonstrate the mismatch between the professed ('scientific') positivist methodology and the substantive theory. This rupture, it will be suggested, led to two contradistinctive schools of thought – the neo-classical school and the neoliberal school – being developed. An orthodox economics which attempts to reconcile these contradistinctive schools ends up being contradictory as a result.

The second part of this article applies these insights to environmental political economy, showing how some of the problems and issues outlined previously in this Journal can be linked to the ruptures within the economic discipline. Again following Foucault, the article will combine a 'negative' critique with tentative suggestions for a 'positive' alternative, which combines insights from popular movements with relatively neglected (subjugated) heterodox economics, employing elements from the original institutionalist school of Veblen, J.R. Commons and the methodological insights of Myrdal. In particular the article considers the idea of a political economy based around economic security as suggested by K.W. Kapp which, together with the interdisciplinary approach he also called for, will be used to show how a nascent counter-discourse might be generated. The article suggests a distinction between depleted resources and scarce resources, and proposes a possible alternative definition of political economy.

Foucault: the politics of truth

The idea that scientists may not actually practice 'science' was popularized by Kuhn in the 1960s. Kuhn was a historian of science and his focus was on the actual practice of scientists. His claim, broadly speaking, was that instances of refutation of scientific theories were seldom acknowledged by the orthodoxy, but instead were put aside as anomalies. There was an idea of scientific progression within Kuhn's analysis however, since these anomalies would build-up and create a

period of scientific crisis which would see the development of an alternative 'paradigm' which explained the phenomena of both the previous orthodoxy and the anomalies (Kuhn 1962).

There is no such idea of progression within the Foucauldian approach. Regardless of whether the practitioners of a discipline see themselves simply as earnest seekers after truth, it is not this endeavour which confers the privileged status of 'science' to a discipline. Rather the acceptance of a discipline as 'true' is the result of discursive rules that determine what is accepted as falsity or truth, what will constitute the objects of analysis and what we say and think about these objects of analysis at a given time (Kologlugil 2010: 3). 'Truth' is an object of power, and each society has its regime of truth. Foucault refers to a 'general politics' of truth, which contains 'the types of discourse which it accepts and makes function as true'. It also contains

the mechanisms and instances which enable one to distinguish true and false statements; the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true. (Foucault 1980:131).

That is to say, according to Foucault, there are no universal criteria for obtaining 'true' or 'scientific' knowledge. The issue is to understand how a particular discourse obtains the status of a 'science' and how the discipline comprises what is to count as truth, rather than how scientific practice should be conducted (Kologlugil 2010:6). Foucault claims that the acceptance of a body of knowledge as 'scientific' is the result of historically specific (discursive) rules, rather than the endeavours of the practitioners. These discursive rules limit what is said or even thought about an object of analysis. They determine what is acceptable as evidence as well as what questions are asked, the 'existence of statements, that rendered them possible, them and none other in their place' (Foucault 1968: 9).

The concept of the 'discourse' as outlined by Foucault is therefore much wider than the Kuhnian concept of the paradigm. The discourse determines what questions are actually asked, and what is regarded as scientific evidence. In this sense there is no discussion of how science ought to be conducted – methodology and epistemology are inherently political according to Foucault, and are linked to the exercise of power. Indeed Foucault refers to a 'political economy' of truth which centres 'on the forms of scientific discourse and the institutions that produce it', is

subject to constant economic and political stimulus and is produced by and 'transmitted' by a small number of 'great political and economic apparatuses': Foucault mentions the media, the military and the university; academia is also part of an 'ideological' struggle' (Foucault 1980: 31).

What is accepted as 'science' and as 'truth' is therefore, according to Foucault, the result of power. For Foucault all claims to truths are historically situated (Kologlugil 2010: 9; Amariglio 1988: 587), and the discursive rules are 'policed' by a variety of institutional practices. Indeed, the discourse is so pervasive that eventually it is self-policed.

The Foucauldian use of the term 'discourse' should therefore not be confused with notions concerning communication or language, which are more commonly associated with post-modern approaches. While these elements may form a part of discursive practices, the practices have a far wider compass. They define objects of study and the rules of engagement as it were; determining what is to count as evidence and what questions can be asked in the investigations the discipline undertakes.

The Foucauldian concept of discourse is bound up in a circular relation with power (Foucault 1980: 133). Foucault distinguishes between power, governance and domination. The latter is what is usually called power, an 'asymmetrical relationship of power in which the subordinated persons have little room for manoeuvre' (Foucault 1988, cited Lemke 2000: 5). However, these are not the primary power source. The discourse is the primary source of power, in that it replaces coercion with processes which construct or modify the self (Foucault 1988, cited Lemke 2000: 6).

The discourse is therefore the root of power in modern society, in that it is ubiquitous and structures thought and action. Power is, however, not totally controlled, and may even be emancipatory or beneficial. Furthermore one is always within a power relationship, one cannot 'escape' power (Foucault 1976: 5); there is no concept of emancipation *from* power.

Foucault's analysis of a 'politics of truth' is therefore an expressly political ontology. What is to count as truth, and what we believe and act upon, will be contested in the social arena. This politicized practice includes the university; truth will be policed by institutional practice even in the arena of the intellectual.

Foucault's later work considered the effects of disciplinary practice on discourses. Foucault relates two meanings of the word 'discipline', as a

body of 'knowledge', and as control, obedience and order (Foucault 1980 cited in Fairhurst 2007: 1). The two meanings, Foucault suggests, are not separate – the discourse generated by a particular body of knowledge will determine behaviour both within a discipline and externally as a form of social order. The disciplines will maintain discipline, and they will also *be* maintained to enable maintenance of a social order. The discourse concerns the relations between bodies of knowledge and forms of social control and possibilities. The politics of truth will determine the belief-systems we employ as guides to action, and in turn create a social order, that is to say 'the operation of power in society and social control... is an integral element of claims to knowledge and of the historical production of truth' (Kologlugil 2010: 10).

Following this view, the complaints of the current wave of protest movements (and indeed major religions) over current policy are therefore entirely apt. Not only does economic analysis have ethical and political consequences, but economic 'science' is itself political, and indeed is a major player in the contemporary power structure. The discipline of economics is a major element in the modern social order, both altering behaviour by affecting beliefs, and conferring legitimacy on political decisions.

One common criticism of Foucault (especially from feminist researchers) is that his approach is somewhat deterministic. However the Foucauldian notion of power does mitigate against this tendency. As stated above, power is ubiquitous and never totally controlled. It is a network that continually flows along a multitude of linked paths. Individuals always use power or have it used upon them, they are never simply the targets of power (Foucault 1976: 93-96, see also Lima 2010: 35).

Since power is never total, we can look for resistance to power – resistance that lays bare the political nature of the dominant discourse. We should look in particular at the periphery rather than at the centre of power and, according to Foucault, we should look for 'subjugated knowledge' including 'naïve knowledges ... beneath the required level of ... scientificity' (Foucault 1980: 82). It is with the association between this 'low-ranking' knowledge and the study of subjugated knowledge within scientific disciplines that critical discourses will arise (1980: 82).

According to Foucault therefore, economics is not a value-free objective human science, and indeed such a science does not exist. In fact economics is itself a major influence on the behaviour it purports to be

studying. It is a part of a power structure that legitimises political decisions, and is a major constituent of modern social order. It achieves this by dominating the discourse, determining and policing which questions are asked, which statements are made, which listened to and which ignored, and what should count as evidence. However the power of the discourse is never total, and it is possible to construct counter-discourses. The final sections of this article will examine how orthodox economics has attempted to shape the environmental policy agenda and outline a possible approach to the construction of a counter-discourse. The next section suggests a way to scrutinize the discourse of contemporary orthodox economics – by examining its past.

The history and archaeology of economics

One of the key components of both the Kuhnian and Foucauldian approach is the centrality of the history of thought. Kuhn suggests that the histories of sciences are always rewritten, so that they lead in smooth progression up to the current paradigm (Kuhn 1962). Foucault takes this further. To examine the subjugated knowledge within a discipline, Foucault suggests we should employ an ‘archaeology’ of a discipline. This is not simply a history of thought outlining what was written by whom, but is a description of the set of rules of the discourse. Foucault suggests we look at the domain of the discourse, which ideas are conserved and which repressed, what form of claims are recognised as valid, which past discourses are retained, and the conduct of the struggle for control of the discourse (Foucault 1968: 60-61).

The archaeology (or study of the archive) is conducted in order to uncover the schisms and ruptures within the discipline, and to give the lie to the claim to seek a universal truth (Kologlugil 2010: 7). That is to say, we should reject conventional interpretations of the disciplinary history, and focus upon the discontinuous character of ‘science’ (Lima 2010: 30-32), examining the power struggles involved in the politics of truth.

We therefore need to begin by a deconstruction of economics, not only its internal contradictions, but also ‘tearing out the hidden and forbidden assumptions’ which we achieve ‘by showing they are not so objective and universally true as they pretend’ (Roseneau 1992: 67, cited Screpanti 2000: 8)

The Foucauldian approach had two elements, a 'negative' critical work of deconstruction, and the 'positive' construction of new sets of questions and concepts for historical enquiry (Lima 2010: 5). The former Foucault termed an *archaeology*, the latter a *genealogy*. It is important to stress that Foucault did not view the specific archaeological deconstructions of disciplines and genealogical reconstructions as his task; his is not a social (or economic) theory. The archaeologies and genealogies are for us to construct (see, for example, Foucault 1980: 5). In an oft-cited interview with *Le Monde*, Foucault suggested his work could be used simply as tools to 'short-circuit, discredit or smash systems of power' (Foucault 1975, cited in McLaren 2009: 2). Elsewhere he elaborates that 'I would like my books to be a kind of tool-box which others can rummage through to find a tool which they can use however they wish in their own area' and 'would like the little volume that I want to write on disciplinary systems to be useful to an educator, a warden, a magistrate, a conscientious objector. I don't write for an audience, I write for users, not readers' (Foucault, 1974, cited in O'Farrell 2005).

It is in this spirit that this project will suggest what a Foucauldian approach to political economy might look like. This will involve an analysis of a political economic *process*, rather than providing an alternative economic 'science'.

In fact it is this need to appear to be 'scientific' that is one of the weak links of the orthodox economic discourse. For economics to perform a legitimating ideological function, the contemporary discourse of economics needs to be recast as a modernist science alongside physics or chemistry. This is a fraught task, especially since the main foundations of the discipline were not situated within such a discourse, and economics has always been uncomfortable in its dual role as a positivist policy science. The archaeology of economics is therefore a particularly powerful tool, because economic concepts were not originated within the positivist framework, and it can be seen how the attempts at developing a positivist economics has rendered the discipline contradictory and vacuous (Mulberg 1995, ch.2).

Indeed, filtering out and discarding values would have seemed bizarre to many of the founders of the discipline. Marshall (ironically the first writer to drop the prefix 'political' from economics) was entirely dismissive of 'pure' economic theory bereft of moral considerations, which he viewed as a waste of time (Coase 1975: 29). Economics was to

be applied in a way that befitted Marshall's (Victorian) morality. It is easy to ignore the ethical component of Marshall's economics however, since these were put in asides, but the quantity of these asides suggests that Marshall viewed them as a vital element. The ethical and moral component of economics was the point of the economic analysis for Marshall and indeed he believed that the mathematical 'shorthand' that economists employed should be burnt after use (Mulberg 1995: ch.2).

The founders of the discipline did not view economics as a value-neutral policy science, but as either a part of or an accompaniment to an ethical endeavour. There are insuperable problems with the attempt to distil positive policy science from an ethical-based economics, deriving from the predicament that while the hedonistic basis of the marginalist scheme lends itself to a methodological individualism, the policy requirements are collective.

This can readily be seen in the trajectory of economic theory. The Ricardian labour theory of value, as Marx demonstrated, led to strong socialist conclusions. While the Marshallian formulation of utility claimed to be an alternative approach, in many respects the conclusions were similar; indeed the term 'neo-classical' was coined by Veblen as implying a continuity from the classics (Veblen 1899a). Similar socialist inferences could be applied to Marshallian utility theory that were applied to Ricardo. As Joan Robinson pointed out, addressing the marginal utility of income or money would justify a whole raft of interventionist policies to counteract inequality, rather than justifying laissez-faire (Robinson 1962: 53 and *passim*).

Although most, if not all, orthodox economists are referred to as neo-classical, a better term would be marginalist, since few contemporary economists follow the (Marshallian) neo-classical tradition (Colander 2000), and few claim to be a continuation of the classics. Indeed, later developments of price theory can be seen as attempts to alter neo-classical economics and reconcile it with laissez-faire. These ranged from a simple denial of interpersonal comparisons of utility (which, as Myrdal pointed out, was the entire *raison d'être* of the concept of utility (Myrdal 1929: 99)), to a switch to ordinal utility, through to the concept of revealed preference, which claimed to avoid the concept of utility altogether. These formulations led to vast aggregation problems, however, which led to economics being unable to show how aggregate welfare is maximised by laissez-faire. Instead the profession produced

numerous studies which ‘embarrassed’ the discipline (Screpanti 2000: 94), including the theory of second-best, and the impossibility theory of Prof. Arrow (Mulberg 1995 chap. 2). Sen suggests these arise because of the paucity of information allowed into contemporary economic theory (Sen 1979: 539).

Far from being a continuous evolution of gradually refined scientific endeavour, economics could be viewed as a political endeavour attempting to reconcile laissez-faire politics with a theory originally grounded in egalitarian principles. This became even more transparent with the 1930s socialist calculation debate. As Taylor pointed out in his American Economic Association presidential address, if value and prices were objective or involved objective feedback mechanisms, then the state agencies could plan the economy accordingly.

It is hard to refute the logic of Taylor, and this eventually lead to the distinctive formulation of the Austrian School (Keizer 1989: 63 ff). It is important to note that this school rejected the Neo-classical approach. The utility approach of the Austrian School was subjective, not objective. No aggregation is possible, and the scheme of the Austrian School is expressly political – Hayek railed against ‘scientism’. The now ubiquitous ‘choice’ definition of economics, published by Robbins in 1932, was Austrian School in character. However, while the definition may be ubiquitous now, it was different to that of Marshall, and it is important to stress that Robbins and Marshall are not employing the same definition (Robbins states this on page one of his 1935 Essay), and are not attempting to do the same thing. Marshall claimed economics was concerned with ‘the material requisites of well-being... on the one side a study of wealth; and on the other, and more important side, a part of the study of man (sic)’ (Marshall 1920: 26-27). Unlike Robbins, this was not some kind of abstract *homo oeconomicus*, but ‘a man of flesh and blood’ (Marshall 1920: 26-27). Robbins on the other hand locates his formulation within a Weberian framework, and employs the concepts of ideal types and *verstehen*. For Robbins, economic man is such an ideal type. It is an expository device to be used cautiously in the development of arguments (Robbins 1935: 97). He states emphatically that ‘valuation is a subjective process, we cannot observe valuation’ (Robbins 1935: 87), and that ‘we do in fact understand terms such as choice, indifference preference and the like in terms of inner experience’ (1935: 87). This is a distinctly non-positivist approach. Indeed, choice is not observable or measurable.

Whereas Marshall held his metaphor of value being determined by the 'scissor-blades' of demand and cost, the Austrian School joined these together. The notion of opportunity cost – cost as opportunities forgone – was central to this. Opportunity cost is subjective; it cannot be measured. Buchanan makes this clear and explicit:

There are specific implications to be drawn from this choice-bound definition of opportunity cost:

1. Cost must be borne exclusively by the person who makes decisions; it is not possible for this cost to be shifted to or imposed on others.
2. Cost is subjective; it exists only in the mind of the decision-maker or chooser.
3. Cost is based on anticipations; it is necessarily a forward-looking or ex ante concept.
4. Cost can never be realized because of the fact that choice is made; the alternative which is rejected can never itself be enjoyed.
5. Cost cannot be measured by someone other than the chooser since there is no way that subjective mental experience can be directly observed.
6. Cost can be dated at the moment of final decision or choice (Buchanan 1973: 14-15).

This conception of cost takes economics away from observation and measurement. Costs cannot be seen and cannot be measured:

In any general theory of choice cost must be reckoned in a utility rather than in a commodity dimension. From this it follows that the opportunity cost involved in choice cannot be observed and objectified and, more importantly, it cannot be measured in such a way as to allow comparisons over wholly different choice settings. (Buchanan 1973: 14-15).

The ubiquitous definition of economics as rational choice was therefore designed to lead to a totally different form of economics, one that was subjective and non-observable and therefore 'unscientific' in positivist terms. In addition, such economic phenomena are expressly incapable of measurement. The standard economics texts are therefore contradictory – the Robbins definition is incompatible with the mathematical models and graphs. Furthermore, this 'choice' definition is expressly political, and is a response to a widespread rupture within the discipline involving the president of a leading economics association. The current protest of students of economics concerning their discipline has considerable legitimacy.

All these elements are simply ignored by the current orthodoxy. Indeed, economists after Robbins misemployed his definition to attempt to consider observable behaviour, which they have attempted to put measurements to in an effort to maintain the 'scientific' legitimacy of the discipline. This has led both to paradoxes and to an inadequate approach to policy.

The political discourse of environmental economics

The previous section has outlined how an archaeology of economics can be employed to uncover the schisms and the hidden history of the discipline. The current orthodoxy attempts to obtain legitimacy by presenting itself as a positive science. In order to do this, a weaker version of the neo-classical formulation was adopted, since the original neo-classical formulation had socialist and egalitarian overtones and was linked by its founders to moral and political debates. The Austrian school realised that it would not be possible to defend both positive science and *laissez-faire*, and so broke with the idea of an economic science. However, the orthodoxy has for the most part simply ignored this division, and thrown the Austrian school definition and concepts (including opportunity cost and uncertainty) in with a weakened version of the neo-classical analysis, ignoring the fact that these approaches are oppositional.

This obviously has implications for the analysis of many areas of policy, but has particular resonance when considering the question of environment, as this issue shows up well both the internal contradictions and the shortcomings of the orthodoxy.

The attempt to apply orthodox economics to environmental resources invariably involves the commodification of those resources (Jacobs 1994: 8). Environmental problems are regarded as market failures. The solutions usually put forward 'resemble the solutions to any market failure' (Perry and Primrose 2015: 134), and either incorporate environmental resources into markets through cap and trade schemes or through taxation (as discussed in Rosewarne 2010: 20-21, Stilwell 2011). These policies reflect the limitations of the school of thought from which they were derived. If for example the correct level of carbon tax can be calculated by elaborate surveys, why not do this for all commodities? In reality, the political bias of most cost-benefit analysis calculations are

usually very clear (a good example is the UK government's High Speed Rail (HS2) analysis, which was based mainly on valuations of executive travel-time). Levels of tax, compensation and the detailed application of the environmental tax regime are invariably part of political debates (Stilwell 2011). Essentially cost-benefit analysis and environmental taxation are simply politics with numbers.

It should be reiterated that the neo-classical economists (as opposed to later marginalist interpretations) were aware of the limitations of markets, and viewed an economics bereft of ethical content as a waste of time. Pigou's original formulation in 1920 of a tax on externalities was in terms of social compensation for lost social welfare, rather than environmental protection. He was also well aware of the limitations of both equilibrium analysis and taxation under conditions of basic insufficiency, and wrote a long section in his 1920 text on allocation during periods of war (Pigou 1920).

The cap-and-trade approach also has links to wartime, in the sense that what is essentially being proposed is the creation and promotion of what would have been called a black market, which was both illegal and attracted social odium. In fact it is noticeable how irrelevant markets are during times of emergency, and Stilwell points out how rationing, price controls and planning were common during wartime (Stilwell 2011: 124). It is worth reflecting why this is the case. Hirsch in his seminal work *Social Limits to Growth* developed the concept of social scarcity, where resources cannot be provided for everyone. The example from Hirsch is road congestion; when road space becomes insufficient, it cannot be provided for everyone (Hirsch 1977). In modern parlance, it becomes zero-sum. However as Benton points out, this example and many others have physical constraints at their base (Benton 1994). If road space, clean water or fuel is limited and insufficient, then these require allocation. Hirsch suggests that employing price for this allocation is inappropriate under circumstances of inequality (Hirsch 1977). That is to say, we should draw a distinction between *scarce* resources and *depleted* resources, the latter being socially scarce and requiring allocation, of which price is only one of several methods, and one which may often be inappropriate.

In a very real sense, taxation or cap-and-trade policies do not solve anything. The same political decisions are taken as before, but these now have a numerical guise. The key decisions – the level and the allocation

of trading permits to entities that have no previous ownership claims, or the level of environmental taxation and the way it is levied – remain political decisions. The fact that the decisions are about numerical levels does not alter the political content.

A common response is that alternatives to depleted resources are always available, and that ‘correct’ pricing and property rights will enable ‘clean’ alternatives to be developed. This is the essence of the ‘ecological modernisation’ approach (for example Mol and Spaargaren 2000).¹ This firstly places great faith in the ability of scientists and engineers to constantly evolve the available technologies. There may well come a time when further innovation is impossible: indeed this may even be the case now. In addition it is far from clear that a profit-directed research strategy will be adequate for this vital task. After all, it was technological development that has been behind the environmental degradation from which we now suffer. In fact Hayek acknowledged that the belief in the continuous development of substitutes for depleted resources is ‘an act of faith’ (Hayek 1960, cited in O’Neill 2012: 1082).

Furthermore, without demand management, technological innovation is insufficient, and may even cause more degradation than before. Again this is a phenomenon noted by one of the founders of the discipline: W.S. Jevons. Writing in the 19th century, he observed that, as the efficiency of coal-fired technology improved, more coal was consumed rather than less. This became known as the ‘Jevons paradox’. Efficiency lowers the relative cost per unit of output, but this may well simply result in expanding usage back to the original level – an effect known as ‘rebound’ – or even (as in Jevons’ example) beyond that level (‘backfire’) as more enterprises become feasible. In the absence of demand management, developing more fuel-efficient cars is likely to lead to more mileage and larger cars rather than less pollution.

Furthermore, the paradox may hold even if the efficiency does not lead directly to an increase in usage. There can also be additional ‘indirect’ rebound effects, since cost savings may be switched towards alternative consumption. Savings on car fuel, for example, might be put towards overseas holidays involving air travel that pollutes the atmosphere. Note that these indirect effects are difficult if not impossible to measure, since

¹ For a wider critique, see Barry (1999) and Benton (1994).

the cause of the switches in consumption patterns cannot be readily known (see Polimeni *et al.* 2008).

One can also question the adequacy of the *ceteris paribus* approach of the marginalist (and also the neo-classical) school with regard to questions of technological development. This issue seems to highlight precisely the sort of dynamic change and open system that is problematic in these approaches. *Ceteris* are no longer *paribus* under conditions of technological change, which will also have a large variety of indirect effects.

There are also many shortcomings within the Austrian school approach. One of the corollaries of eschewing measurement is that aggregate measures become somewhat meaningless, and indeed are viewed by the Austrian school as of no consequence. However, forgoing measurement also involves foregoing any notion of efficiency, since inputs, outputs and any ratio between them cannot be measured and indeed are subjective – as Buchanan spelled out, opportunity cost is linked to subjective value. A ratio of the value gained to cost spent, which is what efficiency measures, would therefore be meaningless.

Furthermore, as Hirsch pointed out, separating ends from means is not ultimately possible. It is never known what the ultimate ‘end’ is, or what is a cost and what is a benefit (Hirsch 1977). Hirsch’s concept was of intermediate goods, which are consumed as a means to obtain other goods or services. My consumption of petrol, for example, is the cost incurred to obtain something else – perhaps food, or employment. Hirsch calls these defensive expenditures, and views them as a cost rather than a benefit. However, the presence of defensive expenditures renders aggregate measures inadequate. Economics no longer ‘adds up’.

The lack of an efficiency ratio, and the ability to separate out costs and benefits, explain seemingly paradoxical results. Both polluting economic activities and any consequent clean-up activities add to GDP. If in fact new clean technologies are invented that also result in a lower expenditure, it would actually lower GDP. The UK Office of National Statistics, for example, reported that the good weather in the UK in April 2011 reduced the use of heating fuel and therefore lowered GDP (ONS 2011). Of course, the temperature within buildings remained the same.

This analysis suggests that the current preoccupation with maximising GDP is misplaced; it is not clear what we are obtaining more of with a higher GDP. In this sense our argument goes beyond the ‘no-growth’

debate, in that it problematizes what 'growth' really is. Nonetheless it remains a primary policy aim for nearly all governments, and may well be at odds with the development of 'clean' technology. In fact, rather than benign technology being developed the reality has been, as Beck suggests, that greater and greater risks have been taken to ensure the availability of alternative fuels and other environmental resources, risks that now outstrip institutional controls (Beck 1992). That is, the neoliberal response to the issues of nature has raised fundamental issues of governance. By the same token, if the idea of environmental taxation was to be taken seriously, these would be so high as to trigger severe and widespread poverty and disruption even in the developed world, which would in turn trigger calls for massive and unprecedented intervention and redistribution, which would again create huge issues of governance (see Goodman and Rosewarne 2010: 2). A serious attempt at an ecological economy soon renders *laissez-faire* impossible.

The analysis above suggests that, far from requiring a simple policy change, the question of environment raises fundamental issues of governance. The need for both risk management and demand management will require a new approach to the relationship between the policy and the economy, and to a movement away from maximizing monetary throughput. The development of such an approach will be discussed in the next section.

Future directions

This article has shown how the Robbins definition, contrary to the usual claims, actually travels an entirely different path from positivism, and employs a subjective or interpretive idea of science. Foucault is therefore correct to associate the Robbins definition with a break from positivism, which he claimed has been the dominant rationalisation of economic discourse (Lemke 2000: 6): Foucault associates it with neoliberalism, predicting the rise of the new discourse. Furthermore, as he points out, the Robbins' definition leaves economics without a subject. Rather than being a positive statement of 'what is', the definition is 'a sort of utopian focus'. American neoliberalism moreover is 'a whole way of being and thinking' and is 'a type of relation between the governors and the governed much more than a technique of governors with regard to the governed' (Foucault 1979: 218-43).

According to Foucault, we should regard economics as a relationship of governance, a *governmentality*. It is a formative part of the social order which it purports to be studying. In this vein, Foucault suggests that an alternative counter-discourse or 'genealogy' can best be created through a union between 'erudite knowledge' – knowledge that been subjugated in the past and brought to light – and what he calls 'naïve knowledge'. The latter is local, unaccepted or popular knowledge which form what he terms 'local memories'. Both these forms of knowledge are concerned with the 'historical knowledge of struggles' (Foucault 1980: 3). A genealogy makes tactical use of this knowledge of struggles in contemporary settings. The Foucauldian approach is therefore directly bound up with political engagement. However, it is for us to create our own tactics using local and subjugated knowledge.

The argument here draws mainly upon the Green movement, but there are many other popular movements that could be referenced, such as the feminist or the International Development movement. The focus is on how Green ideas can inform analysis, and how heterodox schools of thought – ideas which the orthodoxy have subjugated – can be used in conjunction with them to form the basis for a new approach.

Ironically enough, the re-introduction of physical science, as exemplified by Georgescu-Roegen (1971) or the Club of Rome (Meadows *et al.* 1972), has the effect of stretching orthodox economics beyond its limits.² Given that positive science, contrary to the claims of economics textbooks, actually tends towards ideas of economic planning rather than laissez-faire, accepting parameters from physical science is bound to show up the limitations of methodological individualist approaches.

It should be stressed, however, that the issue is one of governance, not simply a planning question. One of the main underlying themes of both the Green movement and of other contemporary popular movements has been the need to consider ethical questions. These are invariably social and political rather than individual in character. The issue of what is morally right cannot be reduced to questions of individual preference,

² It should be added that, while Foucault did not entirely separate out physical from human science, he did suggest that there was a difference in degree in the disputed content of physical science, and indeed he anticipates that physical science would pose problems for economics (Foucault 1977, cited in Özveren 2007). By the same token, it is not clear that a human science – particularly a political economy – should be built upon concepts of physical science, but this large debate is beyond the scope of this short article.

since it is not the individual human making the choices who is facing the loss or hazard. These hazards or losses are social or even global.³

A new, Green political economy will therefore be concerned with a process rather than an outcome. It will be as much concerned with the public forum, participatory democracy, and ethical issues as with the outcomes of market mechanisms. Even where the marketization of environmental resources is technically possible, it is not clear that it is necessarily socially optimal.

Given that environmental resources are invariably socially scarce, and their allocation involves ethical issues, this would be a good starting point for defining a new Green political economy: *economics concerns the selection and implementation of allocation mechanisms for depleted and for scarce resources.*

There are four allocation mechanisms which come to mind (although analysis may unsping others). They are allocation by:

- Ration (including equal-chance lotteries)
- Need or right (including social norms and custom)
- Price
- Maladministration (including diktat, supplier convenience, and artificial exclusion).⁴

The issue for the new political economy will be the appropriateness of the respective methods of allocation for particular circumstances, the specific *modus operandi* of these allocation mechanisms and the objectives and constraints on the process. Allocation requires an allocating principle, an allocating mechanism and an allocating agent. The economic is therefore embedded within the social and the political. It is embodied as a social and a political economy, within a political philosophy and a political structure.

Note that price does remain part of the allocation matrix, and a return to Soviet-era central planning is not envisaged. Neither is it envisaged that

³ They may also fall, of course, to other species or future generations.

⁴ Examples of these are familiar: rationing is common during wartime, and lotteries have been used to ration non-divisible resources, such as secondary school places in desirable schools (it was also used in the London Olympics). Allocation by need is used in many health care services, and the social norm of queuing is commonplace. Exclusion through unfair selection processes is rife in education and employment.

the role of the ecological political economist is to develop an overarching transcendental 'theory' of allocation. Rather it is envisaged that the aim is (more modestly) to provide guidance as to which mechanisms are likely to work best under which circumstances, and to enable the political actors to explain how alternatives to the present power structure might work. In this sense, the political economist is to provide 'tactical' advice.

The new Green political economy will therefore require precisely the alliance of local and popular knowledge with subjugated, erudite knowledge that Foucault suggested. The contribution of heterodox economics to such tactical advice might be classified in three main areas. The first is that dealing with the allocation of depleted resources will invariably involve demand management, which is a constant thread throughout ecological economics. The second contribution is the objective of allocation, an 'economics of enough'. The final class might be termed 'market management' – the operation and management of allocation by price.

Foucault's writings do address these issues. For Foucault, the manipulation of wants is one of the main elements of contemporary power. 'Power', he suggests,

would be a fragile thing if its only function was to repress...[i]f it worked only through the mode of censorship exclusion, blockage and repression...exercising itself only in a negative way (Foucault 1980: 9).

The exercise of power, Foucault holds, is strong because 'it produces effects at the level of desire...' and that 'far from preventing knowledge, power produces it'. It is this alteration of desires and beliefs, corresponding to what Lukes referred to as a third face of power (Lukes 1974), that for Foucault is the major strength of power.

The issue of influence over desires, and of the manipulation of economic demand, has long been part of the Green movement, and has a long tradition within critical institutional economics, going back to Veblen and J.K. Galbraith. Galbraith famously compared modern economies as being like a squirrel on a wheel, running fast but going nowhere (Galbraith 1958: 152). He pointed to the vast expenditure on advertising and promotion as evidence of the triviality of modern production. Veblen employed the notion of 'conspicuous consumption': that many goods were consumed only for the purpose of relative status, and as such most production was actually wasteful (Veblen 1899b). The idea of demand manipulation suggests a qualitative aspect to the idea of sustainable

development, or, loosely speaking, 'green growth'. 'Growth of what?' and 'growth for what?' become more pressing questions than how much so-called growth is possible.

The second area of institutionalist analysis links with this. K.W. Kapp (1976) suggested a refocus away from maximising consumption towards an objective of maximising economic security. This would replace the current emphasis on uncertainty and risk. However, the operationalisation of economic security⁵ requires further analysis. Barry draws on the ILO definitions as a sort of baseline (Barry 2012). While these provide objective criteria, and would be fairly revolutionary if implemented worldwide, it may be suggested that our approach should go even further than this, and propose economic security as a main objective rather than a baseline. It is also not clear that the idea of security can really be objectified. Just as Jackson claims that our idea of prosperity is social and psychological (Jackson 2009), it seems reasonable to claim that security is also social and psychological – we often refer to a subjective 'feeling of security' which is applied to both the present and the future, and which includes others as well as ourselves.⁶ This again points to a political process both of negotiated specifications of criteria and thresholds for security, and also legal and political institutions that are accepted as having the ability to ensure the delivery of economic security.

The suggestion in this article is that economic security is a vital complement to demand management, enabling it to move away from the 'de-growth' debate. Environmental protection need no longer be cast in terms of forfeiture. What is being suggested is an offer by the Green movement of a tactical 'Green New Deal', whereby we are offered a good chance of obtaining what we 'really' want instead of taking risks to obtain artificially created wants. When it is put in this way, ecology looks attractive. The new ecological economics would replace an economics based on greed, uncertainty and a risk society with one based on 'real' wants and economic security.

⁵ The term 'economic security' is employed by the ILO to distinguish it from physical or military security, which are often employed to influence political discourses in other directions.

⁶ Jackson believes that the psychological and social nature of prosperity distinguishes it from 'material security' (Jackson 2011), but this seems different to the economic security discussed here.

The third aspect of allocational institutionalism is the management of market mechanisms. Price will continue to play an important part in allocation. The literature on law and economics goes back at least as far as John Commons, but has previously been associated with reform or even neoliberal approaches. In fact the idea that economic transactions have a legal basis can readily be employed in more radical analyses, since it opened the path to management and control of market mechanisms. Indeed, as Rosewarne points out, both strands of market-based environmental policy (cap-and-trade and taxation) have government and law at their foundations (Rosewarne 2002: 96). A Green political economy would therefore seek to replace an economics which legitimises undemocratic governance, under the guise of *laissez-faire*, with one which actually governs the economy. If the operations of markets can be planned, they can be regarded as a viable alternative to central planning of production.

Many aspects of law appear regularly in policy debates. Discussions of labour laws or consumer laws are commonplace. What is suggested here is that Green principles could be applied directly to all aspects of market management. There is already a growing body of literature linking the schemes of common-resource management outlined by Ostrom (*e.g.* Ostrom 1990) to co-operative enterprises. Deakin suggest these be applied by law to all corporations, which would then (amongst other considerations) have stakeholders included as owners (Deakin 2012). In addition, he suggests that a revision and limitation to limited liability law would provide a natural limit to corporation size (Deakin 2012). These are areas that have long been of concern to environmentalists. Schumacher discussed the size of enterprises and new types of ownership in the 1970s, suggesting that, since all businesses rely on what he calls 'infrastructure', therefore all large corporations should be joint public/private enterprises (Schumacher 1973: ch. 18). Deakin believes we should treat corporations as being commons in themselves (Deakin 2012).

These law-based institutional approaches appear tactically attractive in that they would appear unthreatening to most stakeholders, would enhance rather than provide problems for governance (unlike, for example, high levels of taxation) and would be equitable. Other areas of legal rights that could be similarly addressed could include intellectual property rights (for example patent law as it affects pharmaceuticals).

The other main area of law which has been extensively debated in the past is international trade law. Discussion of the legal basis of the economy implies legal jurisdiction. As Herbert-Cheshire and Lawrence point out, the current focus on globalisation can be regarded as a discursive construct (or indeed an ideology). Miller (1989) draws attention to the fact that, even in global corporations, the size of individual production plants is usually fairly modest (Miller 1989). From an institutional economics perspective, global markets are in no sense inevitable, but are enabled by legislature. However, if the economy is outside of political jurisdiction then it is not clear that political governance is actually occurring. The Green movement has long had a mantra of 'thinking globally and acting locally', and calls for management of international trade have been frequent (*e.g.* Daly and Cobb 1990).⁷ In addition, the Green movement has often called for 'up and down' governance – for both international oversight of the environment and for local democracy. A Foucauldian governmentality perspective would suggest an emphasis on localised power relations over that of the centre or the state (Herbert-Cheshire and Lawrence 2002: 41).

Conclusion

This article has explored the ideological function of orthodox economics – as legitimisation for the current set of undemocratic and inequalitarian policies. Applying the Foucauldian approach to the analysis of human sciences in general and economic 'science' in particular, it has revealed how economics is part of a power structure which is used to maintain social order.

Future research should place nature at the centre of the discipline, and accept the political and contested character of economic analysis. Economics would no longer be solely about choice, but be concerned with the allocation of depleted resources. Allocation by price would only be one of several possible methods of allocation. Future research could usefully build on the heterodox traditions sidelined by the orthodoxy, in particular the institutional economics of Veblen and Commons. Of

⁷ For a critique of the theory of comparative advantage, which is usually put forward as a defence of free trade, see Prasch (1996). Also note Keynes' view that the theory only holds under conditions of full employment (*q.v.* Milberg 2002).

particular interest to ecological economists would be the work of K.W. Kapp, who not only proposed an interdisciplinary approach to economics, but also suggested a focus on economic security as opposed to maximizing consumption.⁸ This could form the basis of an attractive 'New Green Deal'.

This 'Green New Deal' could also incorporate aspects of ecological economics into an institutional economics framework. Using the data on common resource management techniques that Ostrom reports, it can be seen how the field of Law and Economics can be enhanced, and how environmental governance can be effectively enacted.

Commentators on Foucault's legacy have called for 'a revised agenda for governmentality work' which stresses genealogy as critique, and which conceptualises 'politics as relations of contest or struggle which are constitutive of government'. This work was to be 'a successor to socialism' (Weir, O'Malley and Shearing 1997: 504-505). It is hoped that this article has succeeded in offering an example of how we might go about constructing this successor.

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⁸ For an outline of the work of K.W. Kapp see Heidenreich (1998).

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