NATURALISM IN ECONOMICS

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Abstract

Economic methodology has mostly adhered to naturalism, whereby the social sciences are akin to natural sciences and adopt the same positivistic methods. Anti-naturalism, by contrast, asserts that the social sciences are different from natural sciences and need to develop their own methods centred on interpretation and understanding. The present paper draws from scientific realism to argue for an intermediate stance that overcomes the naturalism/anti-naturalism dichotomy. In a 'critical naturalism' there is a single complex reality to be studied but one which accommodates the distinctive features of social studies, including economics.

Keywords: economic methodology, naturalism, anti-naturalism, complexity, interpretative methods, scientific realism

Introduction

Social sciences face a dilemma in comparing themselves with the natural sciences. Are they the same kind of undertaking as the natural sciences, or are they different? Should they imitate the natural sciences, or should they develop their own aims and methods? In philosophy, the unity of the sciences is termed 'naturalism' on the assumption that all sciences have objects of enquiry rooted in a single natural order. Clearly, however, the social sciences differ in some respects from the natural sciences. They have objects of enquiry that are in part the outcome of human action and perhaps influenced by the ideas and activities of social scientists. They may require, to a far greater extent than the natural sciences, an interpretative understanding of other individuals or cultures. One response to this is an 'anti-naturalism' that separates social from natural sciences. Social sciences are thought to necessitate interpretative methods, which replace the empirical and rationalistic methods of the natural sciences. The dilemma, then, is whether to try to establish social sciences on the same footing as natural sciences and share their methods or to stress the peculiar difficulties of social science and draw a firm distinction between social and natural science. Economists have usually chosen the former option.

The possibility of explanatory science implies a realist standpoint: there has to be a reality to be explained. Both naturalism and anti-naturalism adopt types of realism, although often implicitly. Naturalism (in its positivistic guises) bases its realism on observation, anti-naturalism on interpretation. These implicit types of realism stem from the different methods propounded by naturalists and anti-naturalists and are inconsistent with each other. Neither represents a solid philosophical foundation for scientific activity. Recent philosophy of science has proposed an alternative, more explicit 'scientific realism', initially for the natural sciences (Harré 1970; Hesse 1974; Bhaskar 1978; Chalmers 1982) and then, in adapted versions, for the social sciences (Keat 1971; Harré and Secord 1972; Bhaskar 1979; Outhwaite 1987; Sayer 1992). The goal is to provide a new type of realism

that can overcome the naturalism/anti-naturalism dichotomy. A realism adapted for social science can lead to a 'critical naturalism' that envisages a reality existing independently of the act of investigation but simultaneously recognises the differences between natural and social science (Bhaskar 1979, 1986). It will be argued in the present paper that an explicit critical naturalism is a suitable framework for economic theorising and, in particular, for non-neoclassical economics. The discussion will first set out in more detail the traditional naturalist and anti-naturalist positions, then contrast them with critical naturalism, and finally relate critical naturalism to mainstream and non-mainstream economic theory.

Naturalism and anti-naturalism

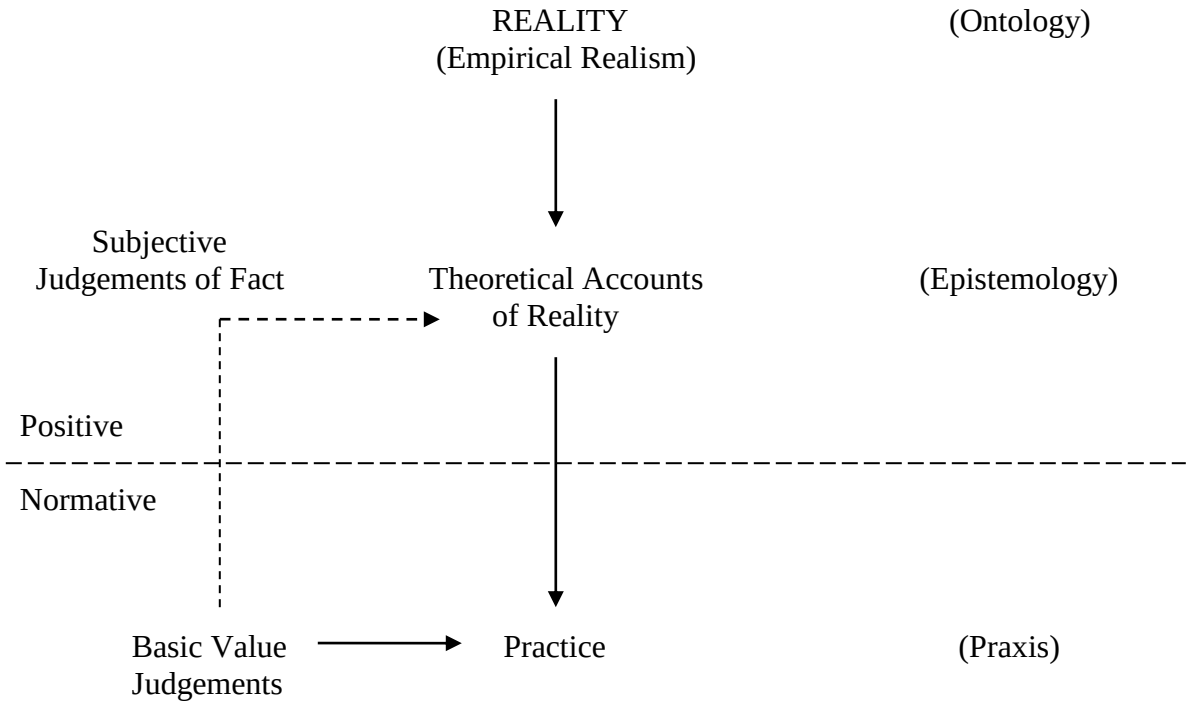
Naturalism unifies the sciences so that there are no fundamental divisions between natural and social science. Human society has no overriding differences from any other objects of enquiry. It is quite feasible to have social sciences in the same vein as natural sciences: the important distinction is between scientific and unscientific activities, not between natural and social sciences. Such a view was associated with the Enlightenment and later with the positivistic science of the nineteenth century. The hallmark of Enlightenment thought is the denial of metaphysics and thus of any explicit presuppositions about reality. To make ontological statements is frowned on as superstitious and prescientific. Instead, the nature of reality has to be inferred from epistemology, that is, from the approved methods of acquiring knowledge. Naturalism appears in rationalistic and positivistic varieties, each of which has an implicit ontology (Bhaskar 1979). With a rationalist epistemology, the implicit ontology is an 'objective conceptual realism' in which human rationality discovers and gives expression to real concepts, but does not create them. Reality remains objective, although it has to be investigated by the play of human reason before it divulges its secrets. With an empiricist epistemology, as in positivistic natural and social science, the implicit ontology is an 'empirical realism' in which reality is dependent on observation. For

something to be regarded as real, it must be susceptible to empirical testing. Positivistic naturalism inspired the growth of social-science disciplines during the late-nineteenth century and early-twentieth century heyday of positive science. The intention was to replace the informal social criticism undertaken by literary authors, cultural critics and philosophers with formal scientific study of society undertaken by professionals. Because of their enduring importance in twentieth-century social science, positivistic approaches merit further consideration.

A positivistic naturalism assumes a natural order that obeys David Hume's account of causality. There is no 'metaphysical' natural necessity, but there are natural laws revealed through the constant conjunctions of observed events. The implicit ontology is empirical and binds reality to experience: anything that is observable is real, and anything that is real is observable. The epistemology asserts that theories should be appraised by observation and places trust in empiricism as a source of 'factual' knowledge unadulterated by values or ulterior motives. Once known, positive facts can be combined with normative value judgements to yield rational and efficient practice. There is a three-tier structure between reality, theory and practice, as shown in Figure 1.

At the top is an (implicit) empirical realist ontology founded on observation; in the middle is an epistemology that likewise depends on observation. By empirical testing, theoretical accounts of reality can be verified (or not-falsified) to leave value-free knowledge. Values appear only if knowledge informs practical activity. A set of 'basic' value judgements is appended at the lowest, practical tier either explicitly (in economic or social policy) or implicitly (in other activities). Although practical conclusions will have normative content, this is not held to be true of theory; a strong positive/normative, fact/value, theory/practice distinction runs through the whole of positivistic philosophy. Observation must be uncontaminated by subjective judgements of fact, which would break down the positive/normative distinction. Doubts about subjectivity in theory and fact are minimised by the widespread and vigorous application of empirical testing.

Figure 1. Positivistic Naturalism



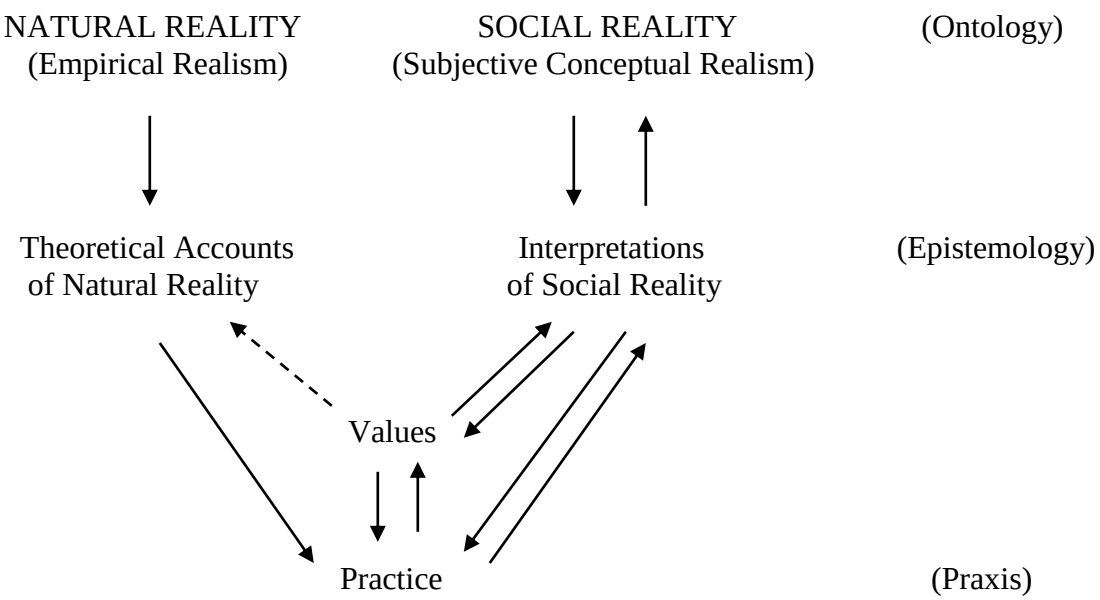
Whereas naturalism is an expression of Enlightenment thinking, anti-naturalism grew from the 'Counter-Enlightenment' - the reaction against the extension of the Enlightenment to the study of human societies (Berlin 1981). The first major exponent of anti-naturalism was Giambattista Vico, who argued that society is a human artefact and intrinsically different from nature. While it is impossible for human beings to understand nature, it is in principle possible for them to understand what they themselves have created, and this should be the aim of study in the humanities. A division arises between the observational natural sciences, which can only identify empirical regularities without understanding them, and the interpretative human or social sciences, which can acquire a true understanding of

human behaviour. The same theme has appeared in many writers since Vico, especially in German philosophy and literature starting with Johann Gottfried Herder and proceeding in the nineteenth century through neo-Kantian philosophy, the hermeneutics of Wilhelm Dilthey and the interpretative sociology of Max Weber.

Anti-naturalism denotes that there is no universal and objective nature. A distinction is made between a natural reality, which can be observed but not understood, and a social reality, which is man-made and understandable through interpretative methods. The position is shown in Figure 2.

Natural reality has an empirical realist ontology permitting the same scientific methods as under positivistic naturalism. Social reality, however, is subjective in the sense that it has been created by humans and is pre-interpreted; following Roy Bhaskar (1979), the ontology can be termed a 'subjective conceptual realism'. Interpretative methods give access to a conceptual reality that (unlike the conceptual reality of rationalism) is man-made and thoroughly subjective. The study of society seeks to interpret something that already embodies interpretation and that may be changed by the interpretations put forward by academic commentators. Theory and pre-interpreted reality are interdependent: their two-way relationship is the 'hermeneutic circle' of multiple interpretations that characterises all social studies. A thoroughgoing interdependence is also present at the bottom, practical tier, where interpretations of reality inform practical activity, which is in turn the subject of further interpretations. Value judgements cannot be kept separate from theoretical knowledge, nor is an attempted separation desirable. The positive/normative, fact/value and theory/practice distinctions all break down, and social science merges with its subject matter. In a hermeneutic method, the aim is to meld reality, theory and practice through a perfect understanding of human beings in their social context.

Figure 2. Anti-Naturalism



Positivistic naturalism and anti-naturalism both have drawbacks. Positivism finds it difficult to handle subjectivity and self-consciousness, together with the connection between the individual and society. Observation of nature is paramount; the external world has primacy, and internal, contextual and historical considerations are overshadowed. Anti-naturalism goes to the other extreme in its dealings with social questions. The keystone of anti-naturalism is the creation of the social world by human beings, which means that everything is subjective and internal, decided by human behaviour or social context. Given the diversity of human societies, the notion of social reality can easily collapse into ontological relativism. The object of enquiry becomes a subject; social investigation lacks the external yardstick of an objective natural order and is adrift except

for the nebulous concept of interpretative understanding. In these circumstances, it is hard to maintain a rationale for social science. How can social science be possible if there is no objective reality to be studied? Most social sciences, including economics, have sidestepped the problems of subjectivity and preferred a naturalistic stance. But a 'critical naturalism' may be able to combine the best features of naturalism and anti-naturalism while avoiding their drawbacks.

Critical naturalism

The difficulties with naturalism and anti-naturalism are due mainly to a casual treatment of ontology. With no explicit philosophical ontology, the presupposed object of enquiry has to be inferred from the epistemology, so that ontology and epistemology become merged and confused. This results in the 'epistemic fallacy' of defining being in terms of knowledge: observation or interpretation determines reality, and the ontological dimension vanishes (Bhaskar 1979). The remedy is to strengthen ontology by positing a reality that is neither empirical nor subjective, but transcendental in the Kantian sense of being necessary to experience but not synonymous with it. A transcendental reality is assumed to exist in its own right, prior to scientific study, and is not conditioned by the actions of the scientist observing or interpreting it. It may be partly the outcome of human behaviour, especially in the social sciences, yet it exists independently of scientific investigation. Because the investigator can stand outside a transcendental reality, there is the chance of a 'critical' naturalism in which study and criticism are no longer entwined with the definition of reality itself.

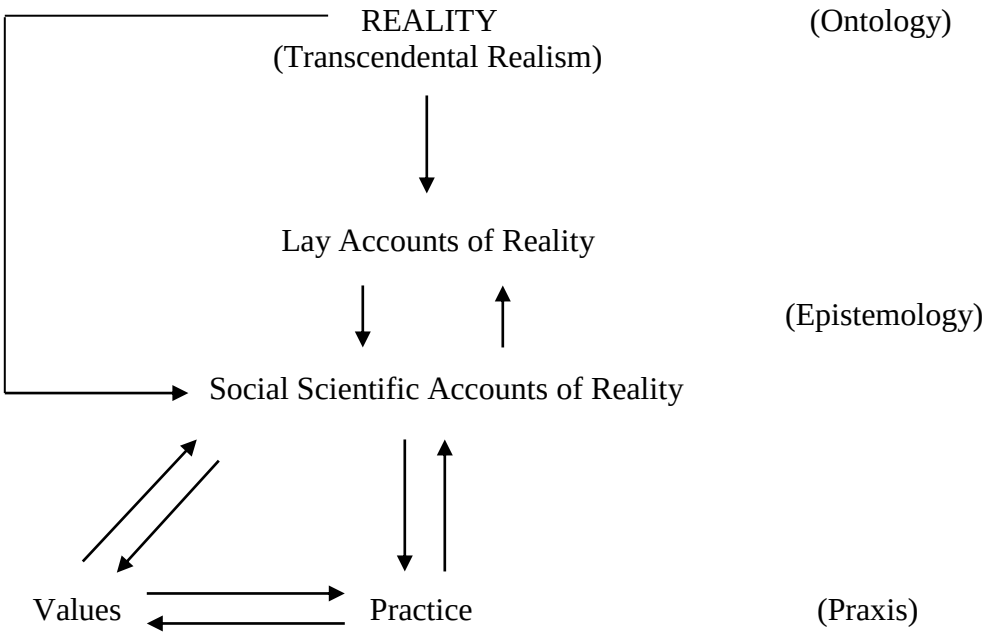
A transcendental realism differs from empirical realism in its acceptance of natural necessity. By divorcing ontology from empiricist epistemology, it is freed from the Humean account of natural laws as governed by the constant conjunctions of events.

Empirical regularities are neither necessary nor sufficient for causality. Reality is assumed to encompass structures and causal powers, in addition to observed events and outcomes. A structure can be defined as a set of objects or practices that are internally related and not a mere aggregation of independent, externally related objects. In social science, the main examples of this are the internal relationships of individuals through the roles and positions they hold within society. Structures can give rise to causal powers, which in turn give rise to events. Explanation consists in the attempt to identify the structures and causal powers underlying events. Natural necessity is a property of structures and causal powers: it can operate with or without being immediately accessible to experience. Empiricism is limited to the sphere of observed events and thereby promotes an oversimplified, single-level view of reality that neglects the richness and complexity made possible by a transcendental realism. Unlike empirical realism, a transcendental realism can contemplate a stratified reality in which causal powers are 'emergent' from the structural relationships between objects. (Sayer 1992, 118-121). Individuals, by virtue of their positions in society, have powers irreducible to the individual level. Human agents are not wholly bound by structural constraints on their behaviour (avoiding a crude structural determinism), and yet society is not made up of an aggregation of isolated, externally related agents. The notion of emergent powers rules out reductionist explanations appealing to only a single level of reality. In a stratified reality, the levels are interdependent, and the desire for reduction to some fundamental level (social structures, human individuals, material nature, etc.) is misplaced. There are no independent, observable, externally related objects that somehow in themselves possess the power to act. The atomism of an empirical realist view is replaced by a more structured and stratified conception of reality.

Under critical naturalism, the interpretative issues emphasised by anti-naturalism are allowed for by adding an extra tier of lay accounts of reality, corresponding to the 'common-sense' opinions found outside formal social scientific work. Lay epistemology produces informal models, concepts and interpretations, which exist both as objects and beliefs about objects. Reality and lay accounts of reality are in part the result of human

action and may indeed change in response to the actions of the scientific investigator. A transcendental reality is still objective, however, in that it is independent of the investigator's knowledge of it. As in all forms of naturalism, a single natural order covers the objects of enquiry for the natural and social sciences, and the anti-naturalistic distinction between a natural and social reality is redundant. The position is shown in Figure 3.

Figure 3. Critical Naturalism



Reality contains beliefs about reality, which enter as objects in the ontological tier and theoretical accounts of objects in the epistemological tier: both lay theorising and social science are part of their own subject matter. Epistemology has been enlarged from its positivistic slant under naturalism to give a hermeneutic circle between lay and social scientific accounts of reality. Lay accounts may be formulated directly from casual empiricism and theorising or taken from social science, probably with a time lag and simplification. Social science strives to explain reality, a task which, if accomplished, will permit more effective practical activity.

Social science also has the function of criticising lay accounts of reality. Under anti-naturalism, the balance of emphasis within the hermeneutic circle is with the lay accounts, which are constitutive of social reality: the job of social science or the humanities is to remove the hermeneutic circle though a perfect understanding of pre-interpreted social reality. Under critical naturalism, social science still tries to remove the hermeneutic circle but in a critical fashion: it must both understand and criticise lay accounts of reality and cause a convergence on a superior social-scientific account. For criticism to be possible, reality has to be independent of the act of interpretation. A critical function is conceivable only if there is a transcendental reality as a reference point that prevents the relativistic impasse of anti-naturalism. Successful criticism is beneficial to practice and may be prompted by practical considerations: theory and practice have a two-way interrelationship. Values are intrinsic to theory and practice and are not introduced from outside as 'basic' value judgements. Critical naturalism follows anti-naturalism in breaking down the positive/normative, fact/value and theory/practice distinctions. The insights of the anti-naturalistic, cultural critique of positivism are retained, but they are confined to an epistemological plane that never impinges on the absolute ontology.

It is a moot point whether a transcendental realist ontology should be given a precise theoretical form. Some realist authors have argued against granting 'ontological privilege' to a particular theory (Layder 1985). Theories should always, on this view, have an

epistemological warrant and not simply be imposed by fiat and endowed with ontological status. A narrow, theoretically based ontology can be a brake on further theorising. Other realist authors (such as Bhaskar 1979) have given theoretical details to their ontology. The intention is not to impose a universal, closed social theory, but to ensure an open ontological framework within which theorising can take place. The ontology avoids any reductionism that denies the role of collective entities or, conversely, of individuals. There should be room for both individual agency and social structure as influences on behaviour, with no insistence on reducing social action to one or the other. This would debar individualistic reductionism that sees society only as an aggregation of individuals and also structural reductionism that sees structures as the only determinants of action. A non-reductionist ontology must comprise both individuals and social structures, along with the complex interrelationships between them.

Various social theories have been designed to be non-reductionist. The foremost example is Anthony Giddens's (1984) theory of 'structuration', which has become an influential alternative to mainstream, structurally dominated modes of sociological theorising. 'Structuration' refers to the reproduction of social structures through individual agency; structure and agency are a duality, and neither has primacy. Giddens is reluctant to describe structuration theory as ontological, but it can be regarded as an 'ontology of potentials', a framework that can embrace many sorts of social behaviour and institutions (Cohen 1989). Roy Bhaskar's social theory is a 'transformational model of social activity' depicting society and individuals as interdependent but distinct (Bhaskar 1979). As in Giddens, society is both a necessary condition for human agency and a product of human agency. Similar ideas are to be found in cultural theory, for example, in the 'constitutive' approach to culture (Williams 1981). All these theories refrain from the reductionism that has marred theorising in the social sciences: economics has been vulnerable to individualistic reductionism, sociology to structural reductionism. Neither can apprehend the non-reductionist idea of culture as a process that both constrains and enables individuals, both binds a society's past with its present and leaves scope for change

(Jackson 1993). The purpose of non-reductionist social theory has not been to impose arbitrary restrictions, but to guard against the restrictions imposed by reductionist theories.

Critical naturalism is consistent with epistemic relativism, that is to say, with the social production of knowledge and the resulting differences in the ways in which knowledge is acquired and expressed. No single epistemological approach is sanctioned, and ways of acquiring knowledge may vary with social context and with different objects of enquiry. The epistemology of the social sciences is liable to be more complex and diverse than that of the natural sciences, as a reflection of the more complex objects of enquiry it has to cope with. If society conforms to a non-reductionist ontology on the lines of, say, structuration theory, then reality has many levels and components: structures, institutions, individual agents, social practices, beliefs, and so forth. The components are interrelated, capable of change, and specific to time and place; they have a degree of differentiation and complexity not normally assumed in the ontology of natural science. The study of society is further hampered by the scarcity of opportunities for controlled observation and by the interdependence of social theorising and its subject matter. Exactly the same points are raised by anti-naturalist critics of positivism, except that anti-naturalism goes on to partition off social science and abandon the objectivity of its ontology. A critical naturalism appreciates that scientific explanations are inevitably mediated by culture and that interpretative difficulties are encountered by all sciences. The difficulties are especially severe in the social sciences, but not severe enough to vindicate anti-naturalism; social and natural sciences can be accommodated within the same ontological framework. Social science is then the same kind of undertaking as natural science, with the same goals, despite the greater obstacles to achieving them. Critical naturalism is a half-way house between naturalism and anti-naturalism. It proffers no universal formulas for scientific success but refuses to give up hope and slide back into relativism. This would be a reasonable stance for economists to take, and yet it is hardly featured in the mainstream economic literature.

Naturalism in mainstream economics

The obvious difficulty in discussing the ontology of economists is that they hardly ever make their ontology explicit. Most would probably endorse some version of naturalism and realism, but this usually has to be inferred from their epistemology or, when epistemology too is absent, from their theory or methods. At the risk of caricaturing the attitude of at least some economists, the rest of this paper will consider the types of naturalism implicit in mainstream and non-mainstream economics.

The most prominent methodological statement in mainstream economics has been Milton Friedman's essay on method, which appears to advocate predictive instrumentalism (Friedman 1953; Boland 1982). If so, then attention is diverted down to the practical question of predictive usefulness and away from the explanatory function of theory. Economists who advocate predictive instrumentalism are probably not opposing realism. More likely, they are arguing for the unimportance of explanatory theory, rather than for its impossibility (Lawson 1989). In that case, predictive instrumentalism in economics is consistent with realism. Accuracy in prediction has to be judged empirically, so there is a latent empirical realist ontology, in common with positivistic natural science, even if no attempt is being made to explain or understand reality. Predictive instrumentalism is allied to Popperian falsificationism, with its dependence on predictive tests. By the 'symmetry thesis' upheld in positivistic naturalism, successful explanation goes with successful prediction: no strong distinction between the two is needed. It then makes little difference whether explanation or prediction is singled out as the aim of theorising. Many mainstream economists were never happy with a solely predictive aim, as demonstrated by the 'realism of assumptions' debate (Samuelson 1964). The debate is largely irrelevant within a positivistic scheme. Realists such as Paul Samuelson merely want a more explicit allegiance to empirical realism than the instrumentalists. Regardless of the prediction/explanation issue, the ontology of most mainstream economists seems to be

empirical realism. The implications are naturalistic: economics resembles the natural sciences and can borrow their methods.

The 'official' falsificationist approach is not always followed, however. Mainstream economics is rife with theories devoid of testable hypotheses, which ought to be deemed unsatisfactory by falsificationist criteria. Mark Blaug (1980) gives numerous examples of this. The untested theories are by no means peripheral and lie at the heart of mainstream economics. Does a dearth of empirical testing mean a departure from empirical realism? The answer in mainstream economics is probably no. Consider the extreme case of general equilibrium theory. As exponents of the most rarefied form of mainstream economics, general equilibrium theorists have been prone to accusations of irrelevance and neglect of empirical grounding. In reply, Frank Hahn (1985) has defended the explanatory function of general equilibrium theory and its value as a benchmark for the rest of mainstream economics. He distinguishes axioms, such as individual rationality, which are generally agreed to be a desirable part of all modelling, from assumptions, such as perfect competition, which are not generally agreed upon and are introduced only to simplify discussion. Individualism and rationality are thus 'realistic', while perfect competition is 'unrealistic'. If 'realism' has an empirical basis, then the implicit ontology is empirical realism, with or without formal hypothesis testing. This seems to be Hahn's position, given his long-term ambitions for a descriptive theory. Most 'pure' theorists in the mainstream would probably claim to be maintaining empirical contact with reality.

But other, non-empirical positions in the mainstream are discernible. Gérard Debreu (1959), for instance, hints at an explanatory function for general equilibrium theory and yet distances the theory from empiricism. The implicit epistemology is a rationalism subordinating ontology to theory; the implicit ontology is an objective conceptual realism. Mainstream theorising inherits its core components from neoclassical economics: individualism, means-ends rationality and market equilibrium. Economists have spoken up for a methodological individualism that reduces all social behaviour to the interactions of

rational individuals in market-like situations. For explanatory theory, this is tantamount to an ontological individualism that defines reality in terms of the individual objects of theory (Lukes 1973). Individualism has never been justified through formal empirical testing in the officially approved way. It comes instead from two main sources: a casual empiricism, such as that of Hahn, which appeals to the 'obvious' properties of real economies; or an implicit rationalism, such as that of Debreu, which appeals to the logical relations behind any economic system. These alternative sources of individualism sustain the individualistic orthodoxy without threatening the attachment to 'scientific' methods.

Critical naturalism is ill matched with mainstream economics for a number of reasons. Insofar as mainstream economics is wedded to empirical realism, there is an immediate contradiction. But even if mainstream economics is separated from empirical realism, it is still at odds with a critical naturalist approach. The axioms of mainstream theory are individualistic and foster individualistic reductionism that jars with the non-reductionist tenor of critical naturalism. In critical naturalism, theory consciously abstracts from many of the facets of a complex, non-reductionist ontology. The likely outcome is a constrained diversity of economic models tailored to fit the aims and objects of study. Reality is assumed to be complex, stratified and differentiated, so theory may have to be multiform and piecemeal. This is somewhat distant from the practice of mainstream economics, where economic behaviour is reduced to a few simple individualistic essentials. The core neoclassical theory is constructed from axiomatic first principles and portrayed as an absolute, free from institutional detail, and relevant in all times and places. Orthodoxy is bolstered by the conservative notion of 'neoclassical ad hocness' (Mäki 1993): heterodox theory is rejected as being 'ad hoc' because of its inconsistency with neoclassicism. Theorising must perpetuate a few dominant ideas that delineate the discipline; other approaches do not count as economics. The reductionist neoclassical orthodoxy constrains theorists and hampers their creativity. Mainstream theory gives an impoverished view of reality, which is inconsistent with the complex, transcendental reality presupposed in critical naturalism.

Naturalism in economics outside the mainstream

Heterodox economists have on the whole shown greater concern for methodology than have orthodox economists. But the methods of heterodox economists, like their theories, have been more diverse than those of the economic mainstream. Ontologies are seldom made explicit, and the differences in epistemology suggest the lack of a single, implicit ontology. Diversity of theory and method, when combined with criticisms of positivism, could be seen as a sign of an implicit critical naturalism. Some heterodox economists have made this explicit by espousing scientific realism, although others have taken alternative positions. Inferring an ontology from heterodox discussion can be hazardous: awareness of interpretative and cultural considerations could, for instance, be symptomatic of a critical naturalism, a realist anti-naturalism, or a non-realist ontological relativism. Caution is therefore required in identifying the implicit ontologies of heterodox economists. The following discussion will try to infer, as far as possible, the main ontological positions in non-neoclassical economics.

A few non-neoclassical economists have been content with positivistic naturalism. Indeed, they have faulted mainstream economics for being 'unscientific' and for having too many elements that are unobservable and inaccessible to formal empirical tests. Joan Robinson, for example, defends Popperian falsificationism as the means by which the superiority of non-neoclassical theory should be proven (Robinson 1977). Her suspicion of unobservable, 'metaphysical' concepts may sometimes be justified, but to insist on observability affirms the empirical realist ontology of positivistic science. According to Alfred Eichner (1983), the trouble with neoclassical economics is that it fails to live up to its falsificationist principles. A more rigorous allegiance to falsificationism would make economics a true science and demonstrate the realism of Post Keynesian theory. The methodological position mirrors that of some mainstream authors (such as Blaug 1980), who feel that the falsificationist programme has not been properly carried out; according to

them, mainstream economics is expected to win the empirically based contest. The argument for renewed empirical efforts overlooks the non-empirical contributions to knowledge and holds out the false prospect of a purely empirical resolution of scientific difficulties. It would be preferable to recognise that empiricism alone cannot support scientific activity and take up a methodological position consistent with the social and cultural aspects of science.

The only significant source of anti-naturalism in economics has been the Austrian school. Austrian authors have always been critical of the positivistic methods of mainstream economics and have defended alternative approaches. Not all of the alternatives diverge from empirical realism. Ludwig Von Mises (1978), for instance, proposes an a priorist 'praxeology' or 'science of human action', in which one derives from introspection a set of certain, axiomatic truths and then apples logical reasoning to these axioms. No external method can verify or falsify the axioms, and yet they are empirical because the a priorism is introspective, rather than constitutive: individuals are finding an empirical reality within themselves. Other Austrian writers, such as Ludwig Lachmann, have invoked the interpretative methods of anti-naturalism. From this perspective, Austrian economics is an offshoot of German anti-naturalistic philosophy. But Austrian economics has a problem with interpretative methods: hermeneutics stresses the importance of culture and social context, which goes against the individualistic grain of Austrian economics. Hence, Austrian economists have been drawn towards individualistic phenomenology and away from a truly contextual hermeneutics. On a different track, Uskali Mäki (1990) has argued that Austrian economics should adhere to scientific realism. As he points out, interpretative and rhetorical methods are consistent with realism (to the extent that they embody an implicit realism), though they are at times described as being non-realist (Mäki 1988). It is preferable in these circumstances to make one's realism explicit. For Mäki, Austrian individualism is preserved through 'ontological reduction' to the individual level. Reductionist theorising drives the ontology; the type of realism is an individualistic variety of objective conceptual realism, as distinct from a non-reductionist transcendental realism.

The individualistic commitments of Austrian economics are a barrier to a critical naturalism. For realism to confer real status on society and to embrace culture and socialisation, it needs a non-reductionist and therefore non-individualistic ontology.

Other non-neoclassical economists are nearer to critical naturalism. In the social sciences, realist authors have frequently worked in a Marxian tradition (Bhaskar 1979; Sayers 1985; Lovering 1990). Karl Marx had no explicit ontology, and some authors have argued that Marxism, centred as it is on practice, can do without ontology (Gunn 1989). Marx did, nonetheless, have an implicit ontology. Realism can be inferred from two general features of his writings. First, Marxian theory has a critical aim: there is an acceptance of an underlying reality that social theorising should reveal. Marx is ever eager to expose superficial, 'vulgar' theory, which serves ideological ends by misrepresenting or ignoring the causal processes that determine events. Second, Marxian social theory is historical and non-reductionist. Neither individual agents nor social structures have precedence; individuals are socially created but simultaneously responsible for the reproduction of social structures and institutions. This is in line with the non-reductionist ontology of critical naturalism. Marx can be regarded as an exponent, or at least a precursor, of scientific realist philosophy. The realism of Marxian economics is traceable back to the classical economics of Adam Smith and David Ricardo, which theorises in a broadly realist manner without the positivism that has dominated the mainstream economics of later years. Classical economics has occasionally been depicted as exclusively theoretical and linked to a rationalist epistemology (for example, by Hollis and Nell 1975). Some versions of Marxian theory have had a similar rationalist, anti-empirical hue: Louis Althusser's structuralist Marxism is the prime example. Classical and Marxian economics have no special link with rationalism, however. Provided that they stay away from reductionist theorising and a strictly rationalist epistemology, they are consistent with critical naturalism.

Post Keynesian economics, too, is consistent with critical naturalism. Little in John Maynard Keynes's work can be construed as positivistic. Recent authors have tried to decipher Keynes's ontological beliefs from his economic and other writings: some have seen him as an organicist (Carabelli 1988; Rotheim 1989), others as an atomist (Davis 1989). Keynes seems never to have set out an explicit philosophical ontology. His epistemology is a mixture of rationalism and empiricism. His theory draws together subjectivist and structural considerations. The open epistemology, plus the combination of individualistic and structural ideas in theorising, is consonant with critical naturalism. If organicism (as distinct from holism) is translated into a non-reductionist, transcendental realist ontology, then it resembles the critical naturalist position. Keynesian economics can thus quite easily be aligned with realism; Post Keynesian economists have been aware of scientific realist philosophy and have called for an explicitly realist approach (Lawson 1985, 1989; Dow 1990; Lavoie 1992). Tony Lawson (1989) interprets Nicholas Kaldor's use of 'stylised facts' as a realist form of abstraction. Sheila Dow (1990) locates the distinctiveness of non-neoclassical political economy in an epistemological 'process truth realism': political economy goes beyond predictive instrumentalism and aims to explain the causal processes behind social and economic events. Post Keynesian economics is a good example of the non-reductionist, partly individualistic, partly structural theory that should emerge from a critical naturalist perspective.

Alongside Marxian and Post Keynesian economics, institutionalism is a third strand of non-neoclassical economics that is consistent with critical naturalism. Institutionalism in its origins blended sensitivity to culture with a desire to be scientific: these traits are clear, for example, in Thorstein Veblen's economic and methodological writings. Veblen was awake to the interpretative qualities of social science, which were largely neglected in mainstream economics (Samuels 1990). At the same time, he stressed the scientific character of economics and hence, implicitly, was adopting a sophisticated, culturally informed version of naturalism and realism. Philip Mirowski (1987) argues that the philosophical foundations of institutionalism lie in Charles Sanders Peirce's pragmatism,

which opposed positivism and looked towards hermeneutics and anti-naturalism. Pragmatism has not always been regarded as a realist standpoint, but, as with anti-naturalism, its main ideas can be incorporated into the critical naturalist position. Later institutionalist writers moved away from interpretative, anti-naturalistic methods and took up more empirical approaches. Institutionalists such as Wesley Mitchell were closely associated with the quantification of economics. On its own, the use of quantitative methods need not signify a positivistic, empirical realist outlook, and this may not be an appropriate interpretation of the views of empirically oriented institutionalists. Undue reliance on empirical methods, at the expense of theoretical or interpretative approaches, would nevertheless be damaging to institutionalism by arbitrarily restricting the range of its activities. Other institutionalists have taken a theoretical approach but have theorised in a reductionist fashion. Much of the 'new institutional economics' is little more than an elaboration of neoclassical theory (Hodgson 1989; Rutherford 1989). The wish to 'explain' institutions individualistically is a reversion to the reductionist, neoclassical goal of eliminating from theory all 'ad hoc' institutional elements. Many recent theoretical developments in institutionalism have been individualistic and have thereby lost sight of the core concept of culture (Mayhew 1987). A better approach would be to aim for a theoretically based, non-reductionist institutional economics, closer to the 'old' than to the 'new' institutionalism (an argument made, for example, by Hodgson 1988, 1989). Critical naturalism would be an appropriate framework for this: it permits cultural ideas to be reintroduced into institutional economics without leading to anti-naturalism.

In economics outside the mainstream, there seems to be a general understanding of the epistemological problems confronting economics, probably more so than in mainstream economics. Heterodox economists have been receptive to the interpretative and relativistic considerations that are characteristic of anti-naturalism: in recent years these views have tended to be labelled as 'postmodern'. Recognition of what Warren Samuels (1991) terms the 'social construction of economic reality' is helpful inasmuch as it stimulates interest in the interpretative and cultural sides of economics, which have long been played down in

economic theory (Jackson 1993). But relativism should not go beyond the realms of knowledge and epistemology to encroach upon ontology. An ontological relativism will preclude social science and, unless one is happy to relinquish the idea of science altogether, it should be avoided. Most heterodox economists would presumably be willing to retain some faith in the possibility of social science; otherwise it would be difficult for them to justify their role as economists. Even those authors who have emphasised hermeneutic and interpretive matters still have need of a form of realism if they are to make their scientific activities intelligible (as Samuels 1993 seems to acknowledge). Nothing in the ontology of critical naturalism excludes free will, the hermeneutic circle, or a pre-interpreted economic reality. If one chooses one's ontology carefully enough, these items can all be kept. Realism, when extended to social science, has been criticised as being circular, a case of ontological question-begging (Albury, Payne and Suchting 1981; Benton 1981; Chalmers 1988). But transcendental realism quite openly involves preconceptions and presuppositions, which may well be culturally specific and restricted to a particular world view. The presuppositions being made are the ones minimally required to justify social science, and anybody sceptical of social science would no doubt be dissatisfied with them. Academics working as social scientists, by the nature of their activities, have little choice but to make ontological presuppositions. The realist argument is that it is better for these presuppositions to be declared from the outset and not left implicit in one's epistemology or theory.

Critical naturalism, as an ontological position, should ideally precede scientific activity in order to provide the ontological background for subsequent theorising. There may, however, be some value in applying it *ex post* to heterodox economics; the theoretical and methodological diversity, coupled with a scientific objective, might be viewed as an implicit critical naturalism. Such an interpretation is implausible for those heterodox authors whose explicit methodological stance conflicts with critical naturalism. Much heterodox economics could, nevertheless, be placed quite comfortably within a critical

naturalist framework. This might be helpful in giving greater coherence and philosophical respectability to a somewhat diverse group of theories and methods.

More important is the application of critical naturalism *ex ante* to future theorising. An explicit critical naturalism would have three main advantages for non-neoclassical economics. The first is that a set of non-reductionist ontological presuppositions is a safeguard against reductionist theorising. Theoretical simplifications can be made only as conscious abstractions; they are 'thought objects' and remain distinct from the non-reductionist ontology. Attempts to establish a universal, reductionist theoretical system, in the manner of neoclassical economics, are repudiated from the beginning. The second advantage is that critical naturalism is conducive to a more open dialogue between economics and other disciplines. Under critical naturalism, all sciences share the same basic objective of investigating a single natural order. Economics is founded in nature and has no good grounds for isolating itself from natural sciences or the other social sciences. It may well be that economics can benefit from reassessing its naturalistic foundations and, in place of the old mechanistic analogies with physics, draw non-mechanistic analogies with life sciences such as biology (Hodgson 1993). Critical naturalism is an appropriate vehicle for this style of naturalistic, interdisciplinary, non-reductionist thinking. The third advantage of critical naturalism is that it can combine diversity of theory and method with the retention of a scientific objective. Its ontological presuppositions are intended to be the weakest ones compatible with social science; they are strong enough to motivate social science, but not so strong as to dictate theory and method. Critical naturalism can address the epistemological concerns of postmodernists (and many heterodox economists) without turning anti-realist and denying the possibility of social science.

Conclusion

Naturalism and anti-naturalism both have something to offer the social scientist. Naturalism offers a rationale for social science: it presupposes an external, objective natural order, unlike the anti-naturalistic descent into subjectivity and relativism. Anti-naturalism offers alertness to the difficulties unique to the social sciences, such as self-consciousness, historical change, culture and ideology, which are often neglected in the anxiety to emulate natural sciences. The purpose of scientific realist philosophy, in its critical naturalist form, is to overcome the naturalism/anti-naturalism division and exploit the best features of both. Critical naturalism can agree with many of the arguments of anti-naturalists, yet it never concedes that social science is a fundamentally different undertaking from the natural sciences.

Realist views have been expounded over the last twenty years or so by writers in the natural sciences and the non-economic social sciences. Except for a few economists outside the mainstream, economics has shown little interest in scientific realism. The case for realism nevertheless applies equally well to economics as to any other social or natural science. The ultimate message of realist philosophy is very simple: social science has a real and externally given, though enormously complex and daunting, object of study. Any hopes of explaining reality may be slender, but they are not to be abandoned. The spirit is one of humility without defeatism. It seems well suited to the study of economics.

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