The Importance Of Nominal Problems

Justin Cruickshank

Dept. Of Sociology, University of Birmingham, UK

Introduction

The argument developed in this paper seeks to save Popper from some of his followers and show how Popper's philosophy, or at least a modified version of it, is central to producing an adequate conception of social science research. Popper's impact has, of course, been mainly with quantitative social science, where his methodological prescriptions for testing theories via the hypothetico-deductive (or H-D) method are drawn upon. Others have taken a more flamboyant approach, using Popper's arguments for knowledge being fallible and growing through criticism, to read him as an intellectual and even a political radical (see for instance Fuller 2003 and Sassower 2006). The focus in this paper is on Popper's critical epistemology, rather than his methodological prescriptions for the H-D method, but this does not mean the argument seeks to present Popper as a political radical. Rather, the attempt will be made to show that Popper's conception of knowledge growing through substantive problem-solving is the most useful approach to knowledge growth for the social sciences. In making this argument, the case will be made that Popper's evolutionary epistemology and commitment to methodological nominalism clash with his later turn to realist metaphysics with the latter needing to be abandoned. Whilst there is no attempt to present Popper as a political radical, the argument of this paper does present Popper's thought as progressive, in the sense that there is both an epistemic and moral commitment to increase knowledge through critical dialogue based on substantive problem – solving.

Popper's philosophy is presented here as a solution to the problem of theory in social science. This problem may be expressed as follows. As part of a general rejection of the notions of truth, knowledge, reality and realism, taking place in some quarters of the social sciences, theory too is rejected. This is because theory is taken to be realist, in the sense that it seeks to develop a set of abstractions that decode the real social processes behind the realm of mere appearances (with these being the changing interactions of agents). That is, theory seeks to mirror a domain which may be called the really real domain. It is argued here that whilst the realist notion of theory is

untenable, so too are the anti-realist positions of postmodernism and neo-pragmatism because they, rather ironically, end up trading on realist assumptions. As an alternative, it is argued that Popper's work can be drawn upon to develop a more nominalistic and problem-solving approach to theory: here theory can help explain reality without this explanation of reality having to rely on realism. Before developing the case for Popper's critical epistemology, an approach called critical realism will be discussed. Critical realism tries – and fails – to turn assumptions about reality into the ontological definitions that function as the condition of possibility of the natural and social sciences, without making any claim about these assumptions and definitions being conceptual isomorphs of the really real realm behind mere appearances. Critical realism is meant to be a realism which avoids dogmatic speculation about the ultimate nature of reality and, whilst it does this, it is still untenable. Before discussing critical realism and Popper's critical epistemology as responses to this problem of theory, the problem-situation at hand will be described in more detail.

Creativity *Contra* Theory?

The social sciences, especially sociology, have been subject to much disputation concerning the status of the knowledge claims that may be made. Much of this disputation concerned whether such claims should be causal explanations or the understanding of intersubjective meanings. With the rise of postmodernism this dispute broadened out to question the very notions of truth, knowledge, reality, rationality and objectivity. This postmodern challenge can be divided into an optimistic and a pessimistic version.

The optimistic version holds that any claim about the world has to recognise not just the instability of language as a medium for describing the word, but also the instability of the social world itself. Such perspectives (see for example Thrift (1995)) celebrate the overcoming of 'essentialism' (meaning the view that one's identity is determined by some fixed biological essence) and the overcoming of the view that identities are determined by homogenous cultures. In place of any emphasis on stability or fixity the focus is on constant change with identities being hybrid mixtures that are subject to reworking. This is celebrated as liberating for the self, because the self is a decentred identity than is not tied to any determinants and, as such, it is free completely to redefine itself. A favoured medium for expressing hybridity is irony and this is clear in postmodern architecture which develops this optimistic approach by playfully mixing modernism with other styles so as to subvert the universalising tendencies of modernism (see Jencks (1996) on this).

The pessimistic version of postmodernism may be said to hold to the hermeneutics of suspicion, meaning that all knowledge claims are taken to be symptoms of an underlying power – knowledge nexus or 'discourse'. The task is then taken to be that of delegitimizing discourses by showing how knowledge claims are not claims about the world that give us truth, but expressions of power. Many who follow Foucault adopt this hermeneutics of suspicion approach and every analysis offered turns on explaining how a discourse operates. One example is provided by Armstrong (1995) who charts the rise to dominance of the medical discourse. He argues that the medical discourse

was confined to bodies deemed pathological and sent to medical institutions and that this changed recently with the medical discourse now having power over all bodies. What this means is that now people always police their behaviour to conform to the prevailing medical discourse which defines the normal body as the always at risk body. In other words, medical discourse is not a body of knowledge which liberates us by giving us knowledge about reality but a form of power which makes agency possibly by moulding people to act in particular ways. By describing the medical discourse for what it is, the hope is that it may be de-naturalised and recognised as a nefarious power-knowledge nexus rather than a liberating body of knowledge. As Sayer (2005) argues though, such positions are crypto-normative. What this means is that whilst a normative commitment against the status quo is the driving force for such critique, this cannot be justified, because there is no notion of truth and no notion of any real human essence or real human rights being oppressed. Indeed, any last trace of 'humanism' is rejected outright.

Whilst no one who espouses the sort of positions just sketched out would regard themselves as a realist, one may say that such positions are actually forms of realism. The reason for this is that the optimistic form of postmodernism posits a metaphysics of contingency. To say the world is all in flux and that there can necessarily be no fixity, is not to eschew metaphysics but simply to offer a metaphysics that defines reality as a process of constant change. As regards the pessimistic form of postmodernism and its attendant hermeneutics of suspicion, one may say that this closely parallels the realism that underpinned ideology – critique. For, whilst there may be no recognition of reality or knowledge, it is still the case that the argument trades on a dualism between appearance and reality, with discourses being the 'moving force' beneath the realm of mere appearances. One may try to argue that exposing knowledge claims as symptoms of an underlying discourse is not the same as saying that there are real material structures, such as capitalism, that act as moving forces to control us via ideology. However, whilst it is the case that discourses and notions of ideologies determined by material structures are different from each other, the argument about discourses is nonetheless realist, because it invokes the existence of a stratum of reality (discourse) that has causal repercussions for agents. (One could also point out that many postmodernists are disillusioned Marxists, as Callinicos (1991) argues, who retain the metaphysics of moving forces controlling agents but without the redemptive ending where agents are freed from forces beyond their control.)

So, contrary to any denial of realism, these postmodern positions trade on a realist metaphysic by making reference to the necessity of contingency and the existence of discourses as a moving force. This inconsistency is picked up on by the neo-pragmatist Rorty (1998a and 1998b). He argues that much postmodern literary criticism is a matter of endless 'unmaskings' and that theories about 'discourse' and 'language' offer a new and 'blurrier' object to replace 'history' or 'the working class' as the object fetishised by radical intellectuals. His point is that whatever the arguments about how postmodernism and post-structuralism differ from Marxism, the arguments advanced are still realist, because they, in effect, seek to gain critical purchase by moving from appearance to reality.

Rorty makes this point as part of a criticism of left wing intellectuals who have turned from substantive social and political problems to 'theory'. Theory in the humanities and social sciences is taken to be the opium of the intellectuals because it tempts them away from the difficult business of engaging with real social and political problems and towards constructing theories to explain the moving force behind mere appearances: theorists are akin the medieval clerics because their special knowledge takes them to a deeper level of reality which mere agents do not understand. With Marxism this was tied to a 'Christian-like' story of redemption in the future, whereas with the optimistic version of postmodernism we are already liberated to revel in our non-essence and, for pessimistic postmodernism, the wait for redemption has been abandoned for the view that liberation is a humanist myth. Theory then is intrinsically connected, by Rorty, to realism, with realist positions seeking some form of dogmatic metaphysical 'one up manship' that trumps other positions by claiming to know the really real realm.

Theorists may be creative in constructing theories but this is not the sort of creativity that is required which, for Rorty, ought to be a creative search for solutions to substantive problems. Other neo-pragmatists also juxtapose theory to creativity (see for example Baert 2005 and Joas 1996), but do so by arguing that theory cannot account for the creativity of agents. For these neo-pragmatists, theory supplies a fixed set of abstract categories which cannot but fail to understand how the social world is constituted by agents in intersubjective networks of meanings who creativity rework their identities and meanings.

For neo-pragmatists then theory is to be rejected because it is intrinsically realist and realism is to be rejected because it is a form of dogmatism that tempts intellectuals to use their creativity in the wrong way and because the emphasis on grand and abstract schemes to explain underlying social processes cannot recognise the creativity of agents. In place of realism, neo-pragmatists subscribe to what may be termed a radical nominalism. What this means is that categories can be freely reworked because they have no determining external referent. To be sure, the notion of a reality beyond ideas is supported, but this reality quickly becomes redundant because it has no role in the free and creative adaption of categories. As Rorty argues (1991: 81), when the die hits the blank something causal happens but there are as many facts produced by this as there are language games to describe it. Given this, there can be no real sense of problems and creativity becomes detached from substantive problem-solving. All we have are freely developed categories which have no limit to their development other than our innate creativity. Any notion of real, objective problems existing independently of our categories disappears altogether. We can create a problem by creatively describing the world in a particular way and we can solve the problem by creatively introducing some new descriptions (for more on this see Calder 2007). Or, to put it another way, we can jump from old to new descriptions, seeking more arresting metaphors (rather than words to represent reality), with this replacing any real notion of a real problem. Hence when Rorty (1998a) discusses feminism, he has to eschew any notion of a 'real essence' being oppressed and argue instead that if feminists find one language game to their dislike, they will need to construct a different one. Any notion of a real problem existing outside descriptions is lost altogether and the

problem becomes that of creatively shifting from a disfavoured set of descriptions to a favoured set of descriptions.

As it happens though, neo-pragmatism, like postmodernism, does have a commitment to realism. This occurs with the *theorisation* of the self, which defines the self as being an intrinsically creative entity, with the worst form of harm that could befall the self being that of having its creativity stifled with an identity imposed upon it (Rorty 1992). Creativity then is defined by this theory as the pre-social essence of selfhood which is shared by all people *qua* people (on this see Cruickshank 2003).

So, if theory is to be rejected for being realist and the radical nominalist alternative is to be rejected for being both implicitly realist (in its theorisation of the self) and unable to link creativity to any meaningful notion of real problems, then we have a problem: we can be neither realist theorists nor radical nominalist neo-pragmatists. Two ways out of this impasse will be explored in the rest of this paper. One is a form of realism, known as critical realism, and the other is Popper's critical epistemology. Critical realists seek to avoid speculation about the ultimate nature of reality (referred to by them as the 'intransitive domain') and, instead, draw out the assumptions about reality that obtain in scientific knowledge, with these assumptions about what reality is being responsible for the success of science. As regards social science, critical realists turn to agents' lay knowledge for ontological assumptions and develop these by linking them to the ontological definitions derived from the natural sciences. This approach to realism seeks to use the definitions of reality as a meta-theory to guide the natural and social sciences. This meta-theory would be vital for intellectual, problem-solving creativity because, for critical realists, successful explanations which solve previous explanatory problems have to be based on a coherent ontology. It is argued here that this approach to realism is still untenable because its attempt to justify its ontological definitions fails and because adherence to this philosophy would preclude the growth of knowledge by precluding the creative development of new theories with new ontological assumptions. Ontological assumptions cannot, it will be argued in this paper, be the condition of possibility of successful science, as critical realists argue and, instead, ontological assumptions change as theories change. In contrast to critical realism's failed attempt to defend a modified form of realism, Popper's critical epistemology, with its commitment to methodological nominalism, does present a tenable way out of the problem – once, that is, Popper's arguments for realist metaphysics have been removed.

Critical Realism: Deriving Ontological Definitions From Exemplary Knowledge

Critical realists seek to develop a philosophy of the natural sciences which is congruent with the history and practice of the natural sciences. This philosophy is then used as the basis for developing a normative approach to the social sciences which will turn the social sciences from immature to mature sciences. In other words, they seek to develop a realist naturalism that fits in with what natural scientists do, rather than trying to impose a philosophical doctrine upon the natural sciences, and which needs to prescribe an approach to social science research which differs from the

approaches currently used by social scientists, in order to make the social sciences properly scientific.

Critical realists argue that most positions which seek the unity of method across the sciences are positivist and that positivist methodological prescriptions must fail to account for the way that the sciences gain knowledge. Positivist philosophies cannot but fail to explain how the sciences work because, critical realists argue, they are based on a fallacy identified by Bhaskar and referred to as the 'epistemic fallacy' (Bhaskar 1997: 16). This is the fallacy of 'transposing' ontological questions about what reality is into epistemological questions about how we know reality. In this case, positivism is held to be a form of empiricism, and empiricism holds that knowledge comes from sense – data inputs, so reality has to be defined in terms of fixed empirical regularities that can be directly observed. In other words, positivism has an implicit ontology, which is a 'closed systems ontology' that construes reality as a system of empirical regularities closed to change. For critical realists, both the H-D method and the inductive method are deemed to be positivist. Of course there are differences: with induction one would seek to observe relations of cause and effect to verify a theory, whereas with the H-D method one would be seeking to observe fixed effects produced by causal laws that were unobservable in themselves, so as to corroborate or falsify a theory. Nevertheless, in both cases, testing would be based on direct observation of empirical regularities that were taken to be fixed, that is, both methods presume the existence of a closed systems ontology. This implicit ontology may fit an empiricist epistemology but, for critical realists, it cannot but fail to account for the practice of science because science is based on the assumption that empirical regularities are not fixed but open to change, that is, science is based on an open systems ontology. Cutting the world to fit a theory of knowledge thus misconstrues the world which, in its turn, has to lead to explanatory failure, because, for critical realists, questions about *how* phenomena interact must be based on a correct definition of *what* the phenomena are.

At this juncture two points need to be made about the critical realist argument. The first is that the putative fallacy referred to as the epistemic fallacy is problematic. It is problematic because it is defined so broadly that only an absolutist metaphysical position which sought to define the ultimate nature of reality would avoid it and it is not clear what the actual fallacy is. Any claim about reality which relates to how we know the world rather than the ultimate nature of reality itself, is taken to be fallacious, but only two examples of this are given by critical realists. One example is positivism and the other example is the relativism taken to be characteristic of postmodernism and post-structuralism. Now if one accepted that positivism and postmodernism were erroneous for construing reality in a way that is different from the way it is defined in science (rather than misconstruing reality itself) and making reality redundant, respectively, then one can still hold that it does not follow that any attempt to define reality through knowledge claims about it is necessarily fallacious. To accept that two approaches to knowledge are fallacious is not to say that any theory of knowledge must be fallacious. This will be pursued later when we see that critical realists themselves manage to fall foul of this putative fallacy.

The second point to note, is that the critique of positivism turns on critical realism developing an alternative rendering of science, rather than simply dealing with the internal logical consistency of positivism. That is, the rejection of positivism for being committed to a closed systems ontology requires critical realism to have already developed an open systems ontology. This could leave critical realists open to the charge that they dogmatically reject positivism because it is simply different from their philosophy of science. However, critical realists would respond by arguing that they do not seek to impose a philosophical doctrine upon the natural sciences but, instead, that they derive their philosophical principles from within the history and actual practice of science. One may describe the stance critical realists take towards science in terms of them treating the natural sciences as a self-justifying epistemic exemplar. The natural sciences may be described as an epistemic exemplar because they have a history of epistemic success, i.e. success in explaining causal processes, and this epistemic success is self-justifying because it is based on the ontological assumptions about the world within the knowledge claims of the natural sciences. In other words, science has produced knowledge without adhering to any form of 'foundational' input from philosophy, and this production of knowledge has not been a happy accident but a result of the correct assumptions about nature within science. These assumptions though are implicit and the task critical realists set themselves is that of explicating these hitherto implicit assumptions and turning them into clear definitions.

This brings us to the distinction in critical realism between the intransitive domain and the transitive domain. The intransitive domain is taken to be reality and the transitive domain is taken to be scientific knowledge about reality. Scientific knowledge is described as the *transitive* domain because scientific knowledge is held to be fallible. The task of philosophy, as far as critical realists are concerned, is that of rendering explicit the hitherto implicit ontological assumptions in the transitive domain and turning these into a clear set of definitions. These ontological assumptions are held to be of vital importance in understanding the epistemic success of science because, for critical realists, ontological assumptions concerning what reality is determine how explanations are constructed. To misconstrue reality means that one will be unable to explain it. Indeed, Bhaskar goes so far as to say that the ontological assumptions derived from the transitive domain are the condition of possibility for science. The reason why philosophy is required to render the hitherto implicit ontological assumptions explicit is that it is assumed that this will assist the progress of the natural sciences by preventing any erroneous explanations being developed. On this view, philosophy is a conceptual 'underlabourer' that can clear away any conceptual confusion over the definition of reality.

The ontological assumptions that critical realist philosophy takes to be implicit in the transitive domain are that the world is a stratified open system. That is, it is open to change at the level of observable events with this change being caused by the interaction of causal mechanisms that are unobservable in themselves; with biological and chemical causal mechanisms being emergent properties that are irreducible down to physics. Theories and methodologies that are concerned with explaining natural reality must therefore seek to explain the operation of unobservable causal mechanisms and give no truck to the notion of relying on fixed empirical regularities.

When it comes to the social sciences, critical realists argue that there are no coherent ontological assumptions. One consequence of this is that the social sciences are, at best, immature sciences. For, without a coherent set of assumptions about what social reality is, the social sciences cannot produce adequate explanations of how phenomena in social reality interact. The task then is to find a non-dogmatic way to arrive at some ontological definitions for the social sciences. One response could be to universalise the assumptions of one existing social science theory but Bhaskar (1998) rejects this, arguing that it would beg the question. In response to this he turns to lay discourse and treats this as what may be termed an epistemic proto-exemplar. This is because lay knowledge is taken to have true but vague conceptions of social reality in it that philosophy can clarify. These assumptions in lay discourse are that agents have free will but are constrained by social structures. Archer (1995) makes a similar argument, but focuses on lay experience rather than lay discourse. She argues that social theorists have betrayed the insights of lay agents concerning the experience of freedom and constrain by focusing only on structures or agents. These notions of freedom and constraint are taken, by her, to lead to the structure – agency problem and the need to define social reality in terms social structures interacting with agents.

To define social structures, critical realists construct a contingent naturalism. They argue that social structures may be conceptualised as emergent properties that arise from the actions of individuals but which then become a stratum of reality in their own right that can condition – but not determine – the agency of individuals. These social structures *qua* emergent properties operate in open systems because agents are not passive structural dopes and can change structures. So, both the natural and the social sciences seek to explain the operation of emergent properties in open systems. This naturalism, or unity of method, is a contingent naturalism, because the need to draw upon the natural sciences for a definition of social reality was contingent upon the social sciences having no coherent ontological assumptions and lay agents having true but vague ontological assumptions that were broadly congruent with the ontological assumptions in natural science. Given this, the task of philosophy as regards the social sciences, is to reject previous theories and to argue for all new knowledge claims in the social sciences to be based on the ontological definitions posited by critical realism, if the social sciences are to be mature sciences.

If one adopted this approach then intellectual – scientific – creativity in both the natural and social would be a matter of engaging in substantive empirical research with solutions to explanatory problems being framed in terms of the ontological definitions furnished by critical realism. Creativity here would be underpinned by theory or, to be more precise, a meta-theory that offered some general definitions, of structures, open systems and, for the social sciences, agency. This meta-theory would not legislate on empirical findings about specific research problems and nor would it seek to justify the ontological definitions proffered by saying that they mirror the intransitive domain of reality in itself. Rather, critical realism seeks to assist the creative solution of explanatory problems by supplying some general definitions of reality that are derived from within a self-justifying epistemic exemplar and an epistemic proto-exemplar. The critical realist meta-theory

would thus assist the creative solution of explanatory problems in the sciences by ensuring that reality was not misconstrued.

Problems With Critical Realism

Critical realism is an unusual form of realism. Bhaskar (1997: 36) argues that he treats metaphysics as a conceptual science. This is because the emphasis is on explicating the ontological assumptions taken to obtain in the transitive domains: critical realism seeks to explicate the ontological assumptions within the self-justifying epistemic exemplar of the natural sciences and the epistemic proto-exemplar of lay knowledge. What this realist philosophy does not do therefore is try to argue for metaphysical realism or postulate the essence of the really real realm of the intransitive domain. One may say therefore that critical realism takes the linguistic turn because its focus is solely on definitions and the correct use of conceptual language in the natural and social sciences. The role of the philosopher is thus not to speculate about the ultimate essence of reality (i.e. philosophers cannot step outside the transitive domain to define the essential features of the intransitive domain) or put forward methodological prescriptions based on an epistemic theory (as positivism sought to do), but to police the language of the sciences. So, critical realism is talk about talk with the correct talk – the correct use of ontological definitions – being the condition of possibility of the social sciences and a useful way to remind natural scientists of their hitherto implicit assumptions which served as the condition of possibility of the natural sciences.

Taking this approach to the philosophy of the sciences opens up a justificationist problem – situation. We may have moved away from what one may term 'foundational' epistemologies and the need to say how knowledge claims are justified (of course this was not an issue for the alleged positivist Popper). However, one does need to justify the definitions used by critical realism. This brings us to some serious problems though. If we grant that deriving ontological definitions from implicit assumptions within a self-justifying epistemic exemplar (natural science) and from within an epistemic proto-exemplar (lay social agents' knowledge) is valid, then we encounter the problem of the epistemic fallacy, as defined by critical realists. The problem here is that if it is fallacious to transpose ontological questions about what reality is into epistemic questions concerning how we know reality, then critical realism falls foul of this fallacy. This is because the ontological definitions are not taken to define the essential features of the intransitive domain but are derived from within transitive domain, i.e. the domain of knowledge. So, by critical realist standards, one cannot actually justify the ontological definitions derived from within bodies of knowledge taken to be exemplary or proto-exemplary, because questions of defining reality are translated into questions of how we know reality. To accept critical realism is thus to accept that the ontological definitions postulated by critical realism are fallacious.

The problem with the critical realist construal of the epistemic fallacy is, as noted above, that any discussion of reality which was not absolutist metaphysic that sought to mirror the intransitive domain, would be guilty of this putative fallacy. One could try to defend critical realism

by redefining this fallacy to include only foundationalist philosophies which set out to define the object to fit the epistemic subject, such as positivism – empiricism (which does not include Popper's philosophy). This does not save critical realism though because there are two other serious problems which it encounters.

First, as regards social science, the attempt to justify an ontology of structures as emergent properties interacting with agents, by deriving it from lay knowledge, begs the question. To say that one cannot universalise the assumptions of one theoretical perspective because that would beg the question does not mean that one can side-step this problem by universalising the ontological assumptions held to obtain in lay knowledge. To argue that the ontological assumptions of groups A, B and C (with A, B and C being different social scientists) cannot be universalised without begging the question does not mean that one can universalise the ontological assumptions of group D (lay agents) without also begging the question.

One also encounters the problem of begging the question in the way that critical realists make the move from putatively true but vague notions of reality to a formal ontology of structures as emergent properties operating in open systems. The issue here is that if lay knowledge is knowledge of freedom and constraint then this, by itself, tells us nothing more than that agents lack total freedom. One could try to build on this by arguing that individuals were constrained by other individuals; that individuals were constrained by intersubjective meanings rather than emergent properties; or that individuals were constrained by structures *qua* emergent properties, etc. That is to say, the truism that individuals lack total freedom cannot, *by itself*, justify a particular social ontology, without begging the question.

The second problem concerns the philosophy of natural science. If we accept for the sake of argument that there are one set of assumptions in natural science and that critical realism has correctly explicated these, then we encounter a tension between the attempt to answer a transcendental question and the putative commitment to fallibilism. The problem here is that one cannot say that a set of ontological assumptions furnish the condition of possibility of science whilst also saying that science, and hence its ontological assumptions, are fallible. For if one took fallibilism seriously (so it was more than an empty rhetorical gesture), then one would want to address the issue of knowledge claims being revised and replaced. This would presumably mean recognising and being able to account for the change in ontological assumptions about reality that would occur eventually as knowledge in the transitive domain changed. However, if it was argued that one particular set of ontological assumptions constituted the condition of possibility of natural science then one could not allow new ontological assumptions to be drawn upon. The philosopher would, given this, be forced to police a situation of formalised Kuhnian normal science: all the scientists *qua* scientists would have to use one set of ontological definitions, because alternative ontological definitions and assumptions would be, by definition, non-scientific for the critical realist.

So, this critical realist approach to the issue of theory and intellectual creativity cannot sustain the notion that the critical realist meta-theory is of vital importance to the creative solution of explanatory problems. For, in the natural sciences, it would impose a condition of formalised Kuhnian normal science that would preclude the growth of knowledge and, in the social sciences, the definitions could not be justified. In addition to this, the philosophy fell foul of the epistemic fallacy as constructed by critical realists – a fallacy which critical realists regard as the Achilles' heel of most preceding philosophies.

A Popperian Alternative

Popper's work is rejected by critical realists as a form of positivism because of his advocacy of the H-D method. To rebut this reading of Popper as a positivist one could note that Popper's rejection of justificationism in epistemology led him to reject the notion of a final justification of a refutation (Popper 1994: xxxv). That is, there is no direct or immediate access to reality and thus there is no justification of a refutation based on direct observation of a closed system. Instead, all claims are fallible interpretations of reality where we, to some extent, impose our stamp on the world. Rather than deal with Popper's methodology though the focus in this section will be on what may be termed Popper's critical epistemology. What this means is that the focus will be on Popper's argument that once epistemology has abandoned the search for justified true belief we ought to conceptualise knowledge as fallible and subject to growth through criticism.

Central to understanding Popper's position is his rejection of 'subjectivist' epistemologies which were concerned with explaining how the epistemic subject can get justified true belief of the objects of knowledge (see especially Popper 1972 and 1974). Popper argued that those philosophies which turned on the subject – object dualism (which are for him Cartesian rationalism together with Bacon's empiricism and the empiricism of the Vienna Circle) put all the focus on the source of knowledge in the mind. The argument here was that the manifest truth could be recognised as such if one paid due heed to the inner source of knowledge, in the form of *a priori* ideas or *a posteriori* ideas. If one failed to do this by, for instance, following social norms, then one was epistemically and morally (Popper notes a religious residue to such positions) responsible for one's ignorance or error. The epistemologies based on this subject – object dualism were meant to be liberating, with the subject having mastery over the object (a point, of course, which postmodernists make of). However, for Popper, these epistemologies conflate the object into the subject. Focusing on empiricism, Popper argues that defining the world in terms of our experienced ideas of it results in idealism, with the object becoming the idea the subject has of the object.

One way of describing this is to say that Popper anticipated what critical realists call the epistemic fallacy. It is important to note that critical realists regard the identification of this fallacy as an original contribution which is radically at odds with all preceding philosophy. In one sense this is true, because they are original in arguing for the switching of concern from epistemology to metaphysics with metaphysics being defined as a 'conceptual science'. However, in a more

important sense, it is erroneous to hold such a view, for many of the debates about idealism and scepticism stemming from the subject – object dualism are, to some degree, holding that it is in error to define the external material object to fit the subject.

What distinguishes Popper is that his critique of the subject – object dualism leads him not to reject epistemology *per se* but epistemology which is concerned with justifying truth claims. One could say that he wants to reject foundationalist epistemology and endorse an anti-foundationalist epistemology which retains the notion of knowledge but which replaces the search for justification with the recognition of fallibilism. Before exploring this notion of fallibilism, we can note that for critical realists Popper's philosophy would still be guilty of the epistemic fallacy. This is because any attempt to develop an epistemology, whether foundational or otherwise, would be committed to the fallacious problem-situation of translating questions about reality into questions about how we know reality. However, the problem with this approach is that unless one opts for an absolutist metaphysics where one defines the really real realm (or intransitive domain), then any philosophical argument about knowledge and reality will be guilty of this including, as we have seen, critical realism itself. So, rather than define the problem too broadly to reject any form of epistemology, we are better off restricting the problem of the conflation of reality into knowledge to foundationalist epistemology.

Popper's anti-foundational approach to epistemology replaces the subject – object dualism with an evolutionary approach to the growth of knowledge. In taking this approach the problem of reuniting a divorced subject and object to explain how the subject can have justified true beliefs of the object is rendered redundant. In its stead, the problem becomes that of saying how we adapt to the environment that we are always already a part of. This means that the 'passive' or 'spectator' view of knowledge characteristic of foundationalism has to be replaced by an 'active' notion of knowledge acquisition and development: rather than the subject passively receiving ideas of the external object, knowledge is acquired by us interacting with our environment and, specifically, by creating, revising and replacing conceptual tools to do this. So, for Popper, knowledge about our environment is possible and in place of certainty it is fallible because it entails conceptual mediation with reality. Fallibilism is not deemed here a 'second – best' position to be endured, but rather a condition to be embraced, for it is responsible for intellectual and even moral progress. The view here is that as knowledge is fallible it should always be open to criticism and this criticism will result in the growth of knowledge. This critical approach to knowledge growth may be said to result in moral as well as intellectual progress because it is based on and reinforces the liberal values of free speech and tolerance of dissent.

When it comes to applying this to science, Popper (2002a and 2002b) argues for what he terms methodological nominalism and against what he terms methodological essentialism. The latter is characterised by the attempt to base science on definitions of reality, with definitions supplying knowledge by capturing the essential features of reality. By contrast, the former – methodological nominalism – eschews the attempt to explain reality by 'pinning down' its essential

features in fixed definitions and, instead, treats concepts as changeable tools that should explain how phenomena interact – not what the really real properties are behind such interactions. This is compatible with the H-D method because whilst the H-D method postulates the existence of unobservable causal laws, such postulations are revised and replaced when predictions based on them are falsified: one may conjecture the existence of a causal law and then replace this with another conjecture when corroborating evidence turns to falsifying evidence. In other words, postulating the existence of unobservable causal laws does not necessarily commit one to the view that claims about such entities may be justified and treated as the essential properties from which we may read off what happens in the realm of empirical observations.

Using Popper's approach we may say that critical realism was a form of methodological essentialism because ontological definitions are taken to be the drivers of intellectual progress. Unlike the methodological essentialism that Popper is concerned with though, critical realism does not posit definitions that are meant to be conceptual isomorphs of the intransitive domain. Nevertheless, critical realism holds that the condition of the possibility of natural science and social science is that they are based on true ontological definitions. This may avoid the subject – object dualism but it still operates within the ambit of the justificationist problem – situation, for critical realists have to justify their definitions and, as we have seen, their justifications for their ontological definitions fail.

Nominalism *Contra* Realism

In his later work, Popper (1972 and 1996) modified his approach to fallibilism by introducing the notion of verisimilitude and he replaced his earlier agnosticism towards metaphysics with an endorsement for realist metaphysics in the form of an argument for metaphysical realism and a position he termed 'modified essentialism'. This alterations are, it will be argued here, highly problematic for his critical epistemology and its commitment to an evolutionary approach to knowledge. Before we explore these problems we need to clarify what these changes were to Popper's philosophy.

As regards verisimilitude, Popper argues that whilst we can never attain absolute truth, this ought to be our goal and, as we pursue this goal, we will get closer to the truth. As regards metaphysical realism, Popper argues that we can neither prove this nor disprove its contrary, which is idealism, because both are metaphysical positions. Nevertheless, he says that are reasons to prefer the view that there is a reality that exists independently of our ideas of it, to the view that reality is exhausted by our ideas of it. The basic point he makes is that idealism is an arrogant philosophical conceit that makes reality dependent on us. As Popper puts it '[d]enying realism [and thus affirming idealism] amounts to megalomania (the most widespread occupational disease of the professional philosopher) (1972: 41). He continues by arguing that if realism is true then the reason for the impossibility of proving it is obvious, namely that knowledge consists of fallible or tentative adaptations to reality, meaning that we cannot *justify* any claim about what lies beyond our

theories. Nonetheless, Popper argues that we still need to *presume* the truth of realism because, without it, our fallible search for truth becomes pointless (Popper 1972: 41-42). Whereas metaphysical realism simply asserts that there is a reality beyond our representations of it, Popper's arguments for modified essentialism go one step further, to deal with the issue of the essential features of reality. This he describes as follows:

> Although I do not think we can ever describe, by our universal laws, an ultimate essence of the world, I do not doubt that we may seek to probe deeper and deeper into the structure of our world or, as we might say, into properties of the world that are more and more essential, or of greater and greater depth. Every time we proceed to explain some conjectural law or theory by a new conjectural theory of a higher degree of universality, we are discovering more about the world: we are penetrating deeper into its secrets (Popper 1996:137).

So, in contrast to the metaphysical agnosticism of the *Logic of Scientific Discovery* (2002c), later Popper gives us a strong commitment to metaphysical realism and the notion that we are getting closer to the truth about the properties of reality. Two problems with this may be identified.

The first problem to note here is that the argument for metaphysical realism is less than convincing and, as with other arguments which hold that metaphysical realism has to be presumed to make sense of science (see for instance Trigg 1989 and 1993), it begs the question: the view that science can only make sense if one presumes the truth of metaphysical realism only makes sense itself if one is already committed to the view that science must presuppose metaphysical realism. To be sure, saying that science only makes sense if one rejects the idealist view that theories are self-referential, with the world being that which we freely make, and endorses the metaphysical realist view that there is a reality that exists independently of our representations of it, sounds intuitively plausible. However, one does not need to presume the validity of metaphysical realism to argue that theory change is rational because it is a matter of epistemic progress. Indeed, the notion of science having rational theory change is undermined by this metaphysical argument. The reason for this is that is opens up a dualism akin to the subject – object dualism rejected by Popper. In this case, rather than have the lone mind of the epistemic subject divorced from the objects of knowledge, we have our human made theories on the one hand and a postulated metaphysical domain on the other hand which is unknowable in itself. With this bifurcation we can never step outside our theories to see if a theory captures, wholly or partly, the reality that exists independently of our theories. The realm that theories seek to refer to is defined as an metaphysical domain which is beyond knowledge. Of course, metaphysical realism is itself an ontological and not an epistemological doctrine: it does not say whether or not we may know reality (on this see Searle (1995)). Nevertheless, Popper is using this metaphysical doctrine as the condition of possibility of scientific knowledge, by saying that epistemic progress - or, the growth of knowledge – is only possible if one presumes this doctrine. Yet, adopting this position just invites the sceptical rejoinder that what we

take to be knowledge not only lacks justification (in the traditional epistemological sense) but that it cannot even be taken as a fallible engagement with reality.

The second problem is that the arguments for verisimilitude and modified essentialism clash with the evolutionary epistemology advocated by Popper. This is because whereas evolution is characterised as a process without a telos or direction, the arguments about getting closer to the truth and penetrating deeper into nature's secrets imply a very clear direction and goal. One may argue that this is a perfectly acceptable position and, if it clashes with other aspects of Popper's work, then those other aspects must be erroneous. There is not the space here to review all the discussions about Popper's evolutionary epistemology but, what we can say, is that these arguments about evolution towards a certain goal are problematic. For a start one must end up justifying the view that ontological assumptions are becoming progressively more accurate renditions of the really real realm (albeit with this being a never ending process) but no such justification is given. Instead we are told this must be the outcome of the process of problem-solving but this simply begs the question. At this point we may, surprisingly, gain by turning to Kuhn and, specifically, his argument about the parallels between scientific and biological development. Kuhn argues that 'scientific development must be seen as a process driven from behind, not pulled from ahead – as evolution from rather than evolution toward' (2000: 96). In other words, we can improve our conceptual tools by responding creatively to problems but this focus on overcoming problems does not underwrite any notion of problem-solving necessarily producing increasingly accurate ontological assumptions into infinity. And, of course, it does not mean, *contra* Kuhn, replacing the notion of problem-solving with the notion of puzzle-solving which is, ironically, more suited to the notion of knowledge evolving towards a particular goal, given that puzzles have solutions. Nevertheless, taking this notion of evolution seriously does mean recognising the existence of a path-dependency, in the sense that theories are not constructed *ex nihilo* but as solutions to past explanatory failures. We are on a path, the direction of which is contingent upon the creative adaption to explanatory failures, and this is not sufficient to presume we are on a never ending path to a God's eye view.

Conclusion: Methodological Nominalism, Problems And Theory

Contrary to Popper's implicit view that the condition of possibility of the natural sciences lies in adherence to a realist metaphysic, we can say that his account of evolutionary epistemology is able to sustain the notion of theory change in the natural sciences being a rational process without the need for such metaphysical support. The reason for this is that Popper's evolutionary approach to knowledge, which holds that knowledge grows through substantive problem-solving, replaces any dualistic conception of the subject, or theories, being separate from reality with the notion of knowledge being always already engaged with reality – knowledge claims, in the form of theories, are an on-going adaption to reality. Given this, one may argue that theory change is a rational process because it is driven by finding solutions to substantive problems. That is, it is a rational process not because it is evolving to the telos of 'deeper' knowledge of a domain defined as separate from knowledge, but because it is a creative response to problems – it is evolving away from past explanatory failure. Central to this is methodological nominalism which construes theories as conceptual tools that need to explain the interaction of phenomena , in contrast to any form of

15

essentialism, which holds that the task of theories is to represent, in a fallible or otherwise way, the essential defining features of reality.

This can be applied to the social sciences as follows. The social sciences, like the natural sciences, do not get knowledge because they adhere to a fixed set of ontological definitions or because general theories are able to map all the essential determinants of social reality. Instead, knowledge grows in the social sciences though substantive problem-solving. This requires intellectual creativity to solve problems and central to this is theory, conceived of in non-realist terms, because it is a tool that we can adapt through our problem-solving engagement with reality. The growth of knowledge in the social sciences may therefore be said to rely on what could be termed nominal problems rather than real*ist* problems: that is, we encounter real problems but these are not failures of theories to represent the really real realm, or failures to conform to a set of ontological assumptions in particular domains of knowledge, but problems of our conceptual tools to deal with the reality that they are already engaged with.

Bibliography

Archer, M.S. 1995. *Realist Social Theory: The Morphogenetic Approach*. Cambridge: Cambridge University Press.

Armstrong, D. 1995. 'The Rise Of Surveillance Medicine', *Sociology Of Health And Illness* 17 (3): 393 - 404.

Baert, P. 2005. *Philosophy Of The Social Sciences: Towards Pragmatism*. Cambridge: Polity.

Bhaskar, R. 1997 (1975). *A Realist Theory Of Science*. London: Verso.

Bhaskar, R. 1998 (1979). *The Possibility Of Naturalism: A Philosophical Critique Of The Contemporary Human Sciences*. 3rd edition. London: Routledge.

Calder, G. 2007. *Rorty's Politics Of Redescription*. Cardiff: University of Wales Press.

Callinicos, A. 1991. *Against Postmodernism: A Marxist Critique*. Oxford: Polity.

Cruickshank, J. 2003. *Realism And Sociology: Anti-Foundationalism, Ontology And Social Research*. London: Routledge.

Fuller, S. 2003. *Kuhn Vs Popper: The Struggle For The Soul Of Science*. Duxford: Icon Books.

Jencks, C. 1996. *What Is Postmodernism?* 4th edition. Chichester: Academy Editions.

Joas, H. 1996. *The Creativity Of Action*. Cambridge: Polity.

Kuhn. T.S. 2000. *The Road since Structure: Philosophical Essays 1970-1993*. London: University Of Chicago Press.

Popper, K. R. 1972. *Objective Knowledge: An Evolutionary Approach*. Oxford: Oxford University Press.

Popper, K.R. 1976 (1963). *Conjectures And Refutations: The Growth Of Scientific Knowledge*. London: Routledge.

Popper, K.R. 1996 (1983). *Realism And The Aim Of Science*. London: Routledge.

Popper, K.R. 2002a (1957). *The Poverty Of Historicism*. London: Routledge.

Popper, K. R. 2002b (1945). *The Open Society And Its Enemies*. London: Routledge.

Popper, R. K. 2002c. (1935). *The Logic Of Scientific Discovery*. London: Routledge.

Rorty, R. 1991. *Objectivity, Relativism And Truth: Philosophical Papers vol. 1*. Cambridge: Cambridge University Press.

Rorty, R. 1992. *Contingency, Irony And Solidarity*. Cambridge: Cambridge University Press.

Rorty, R. 1998a. *Truth And Progress: Philosophical Papers vol. 3*. Cambridge: Cambridge University Press.

Rorty, R. 1998b. *Achieving Our Country: Leftist Thought In Twentieth Century America*. London: Harvard University Press.

Sassower, R. 2006. *Popper's Legacy: Rethinking Politics, Economics And Science*. Stocksfield: Acumen.

Sayer, A. 2005. *The Moral Significance Of Class*. Cambridge: Cambridge University Press.

Searle, J. R. !995. *The Construction Of Social Reality*. London: Allen Lane.

Thrift, N. 2005. *Knowing Capitalism*. London: Sage.

Trigg, R. 1989. *Reality At Risk: A Defence Of Realism In Philosophy And The Sciences*. Hemel Hempstead: Harvester Wheatsheaf.

Trigg, R. 1993. *Rationality And Science: Can Science Explain Everything?* Oxford: Blackwell.