The relations between the theoretical and the empirical, the abstract and the concrete, have always been problematic in marxism. Marx's disdain for knowledge based upon mere appearances has meant that few marxists have accepted the empiricist doctrine of the theory-neutrality of observation. But while, in a negative way, there is a consensus about the rejection of this doctrine among marxists, and while we often quite readily talk of 'essence and appearance' and 'underlying' structures and causes, there is little agreement about an alternative view of the status of marxist concepts and of the relations between the theoretical and the empirical. The radical undermining of empiricist views on this relation in the philosophy of science has been similarly unsettling, producing shifts towards idealism, particularly in the form of conventionalism. The abandonment of the dangerous innocence of certainty in knowledge based on experience has given way to possibly more dangerous views in which knowledge is believed not to be subject to any extra-discursive checks.

This crisis at the philosophical level has surely made its impact on substantive marxist research. A major characteristic of recent marxist study has been a continual reconstitution of abstract theoretical concepts (even where new objects of study - such as the state - are concerned), or else a kind of 'pseudo-concrete' analysis where the specificities of the concrete are reduced to an abstract category. It is not too much to say that the recognition of the impossibility of theory-neutral observation has induced a fear that any empirical research would inevitably be tainted by empiricism.

An early opponent of this anti-empirical or 'pseudo-concrete' tendency was Sartre: 'There is no longer any question of studying facts within the general perspective of Marxism so as to enrich our understanding and to clarify action. It is not too much to say that for the recognition of the impossibility of theory-neutral observation has induced a fear that any empirical research would inevitably be tainted by empiricism. An early opponent of this anti-empirical or 'pseudo-concrete' tendency was Sartre: 'There is no longer any question of studying facts within the general perspective of Marxism so as to enrich our understanding and to clarify action. Analysis consists solely in getting rid of detail and forcing the significance of events' [1] and, more strongly: 'Marxism possesses theoretical bases, it embraces all human activity; but it no longer knows anything. Its concepts are dictats: its goal no longer to increase what it knows but to be itself constituted a priori as an absolute knowledge' [2].

A strikingly similar kind of criticism is made in many of Raymond Williams' writings. For example, in *Marxism and Literature*, he attacks the kind of marxism in which: '

... the analytic categories, as so often in idealist thought, have, almost unnoticed, become substantive descriptions, which then take habitual priority over the whole social process to which, as analytic categories, they are attempting to speak.' [3]

And again, in less sober style but with similar intention, E.P. Thompson has polemised against a condition which he aptly terms 'intellectual agoraphobia' [4] epitomised by those for whom the concept 'mode of production' '

... has become like a base camp in the Arctic of Theory which the explorers may not depart from for more than a hundred yards for fear of being lost in an ideological blizzard.' [5]

This kind of reductionism is common to many areas of marxist analysis, whether economic, political or cultural. It is politically damaging because the failure to grasp the specificities of the concrete inevitably weakens attempts to inform practice. Practice always takes place in the muddy waters of the concrete: it cannot be usefully informed by a theory which does no more than reduce the concrete to the abstract.

But all this is no more than a statement of the problem. To solve it, it is at least necessary to clarify concepts such as 'theoretical', 'empirical', 'abstract', and 'concrete'. This paper attempts this by drawing upon arguments from the realist theory of science, especially as it has been recently developed by Bhaskar and Harré [6]. In so doing, I shall try to shift debate about these concepts outside the crippling polarity of empiricism and rationalism which characterises the present crisis of epistemology.

**Theory and Observation: preliminary points**

It is now widely recognised that observation is not theory-neutral but theory-laden, and that theory does not merely 'order facts' but makes claims about the nature of its object. So, in evaluating observations we are also assessing particular theoretical concepts and existential claims. A common response to this shattering of innocent beliefs in the certainty and
neutrality of observation has been the development of idealist (especially conventionalist and rationalist) philosophies which assume that if observation is theory-laden, it must necessarily be theory-determined, such that it is no longer possible to speak of criteria of 'truth' or 'objectivity' which are not entirely internal to 'theoretical discourse'. However, this is a non-sequitur for at least two reasons. First, theory-laden observation need not be theory-determined. Even the arch-conventionalist Feyerabend (1970) acknowledges that 'it is possible to refute a theory by an experience that is entirely incorporated within its own terms' [7]. If I ask how many leaves there are on a tree, my empirical observation will be controlled by concepts regarding the nature of trees, leaves and the operation of counting, but to give an answer I'd still have to go and look! In arguing that there are no extra-discursive criteria of truth, recent idealists such as Hindess and Hirst echo Wittgenstein's identification of the limits of our world with the limits of language, and share the confusion of questions of What exists? with what Can be known to exist? The truism that extra-discursive controls on knowledge can only be referred to in discourse does not mean that what is referred to is purely internal to discourse [8]. Secondly, and more simply, it does not follow from the fact that all knowledge is fallible, that it is all equally fallible.

While recognition of the theory-laden nature of observation suggests that any rigid distinction between description and explanation should be abandoned, we presumably would wish to retain a distinction between theoretical research (or critique or reflection) and empirical research. Certainly empirical research can never be a-theoretical, but it would seem to be a different activity from theoretical debate.

Abstract and Concrete

To try to provide a sound basis for the distinction: theoretical/empirical it is necessary to consider a related, but not identical, distinction that is fundamental to marxist method: that between the abstract and the concrete.

Marx's own definition of the concrete from the 1857 Introduction has been trotted out in scores of recent marxist writings but is worth examining to see how it differs from the more familiar concept of the 'empirical'.

'The concrete concept is concrete because it is a synthesis of many definitions, thus representing the unity of diverse aspects.' [9]

By 'concrete' we mean something real, but not something which is reducible to the empirical: we mean far more than just 'factual'. The concrete object is concrete not simply because it exists, but because it is a combination of many diverse forces or processes. In contrast, an abstract concept represents a one-sided or partial aspect of an object. For example, if we conceptualise an object such as a factory simply in terms of its outward appearance, the concept will be abstract in the sense of one-sided even though it refers to something which can be empirically observed. To make this a concrete concept we would have to specify all the relationships in which the factory is involved with its workforce; its suppliers and buyers; its creditors and competitors, etc. These diverse determinations are not simply listed and 'added up', but are synthesised; that is, their combination qualitatively modifies each constituent element. However, in order to understand this combination, we normally have to isolate each element in thought first, even though they do not and sometimes could not exist in isolation in reality. It's important to note that whether the concrete is observable (and hence an empirical object for us) is contingent (i.e. neither necessary nor impossible). The concepts 'concrete' and 'empirical' are not equivalent.

What is then awkward is that Marx also sometimes uses the term 'abstraction' pejoratively. Again, in the 1857 Introduction, he discusses various ways of studying the political economy of a country [10]. The possibility of beginning with the population is dismissed as an abstraction unless it is broken down into its constituent classes, for in concealing these, it would be a 'chaotic conception'. So evidently there is an arid and rationalist and bad ('chaotic') abstractions. It would take quite a long discussion of marxist theory to demonstrate why it is essential to deal with classes rather than population or, for that matter, any other aspect of the population. Without such a defence, Marx's criticism is liable to appear to the non-marxist as simply a dogmatic assertion. What is required here is surely a general epistemological distinction for discerning misleading abstraction from enlightening or rational abstraction: the abstract-concrete distinction is not enough on its own. Moreover, as we shall see, it doesn't help us distinguish between what can be known from theoretical analysis and what must be learned from (theoretically-informed) empirical study. To try to solve these problems, I shall draw upon some recent work in the philosophy of science.

One of the most direct challenges realism makes is on the question of Hume's problems of causation and induction. Starting from an ontology of discretely-distinct, atomistic events and objects, Hume insisted that there could be no necessary connexions between these. We might observe regularities in patterns and sequences of events, but any attributions of causal connexion could only be by of psychological origin, for knowledge that C has always been followed by E in past experience does not logically guarantee that it will always do so.' Even if we could establish that constant conjunctions were universal, they would still be contingent. Causation is therefore equated with regular succession, and so cannot be distinguished from correlation or accidental succession.

This counterintuitive, but logically sound argument concerning the problem of induction has come to be known as the 'scandal of philosophy', for it would seem that we are perfectly capable of distinguishing between the causal processes that make the hands of a clock move, and the accidental relationships that seem that we are perfectly capable of distinguishing between the causal processes that make the hands of a clock move, and the accidental relationships that appear to the non-marxist as simply a dogmatic assertion. What is required here is surely a general epistemological distinction for discerning misleading abstraction from enlightening or rational abstraction: the abstract-concrete distinction is not enough on its own. Moreover, as we shall see, it doesn't help us distinguish between what can be known from theoretical analysis and what must be learned from (theoretically-informed) empirical study. To try to solve these problems, I shall draw upon some recent work in the philosophy of science.

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Realists have argued that, although it is logically possible that the world itself may suddenly change completely (the 'big' problem of induction), this does not mean that every aspect of the world is contingently related [12]. If all objects or events are independent, then their pattern or succession is certainly accidental, but precisely because some changes are changes in things, not all changes are independent or accidental [13]. In other words, an atomistic ontology makes it impossible to distinguish between the concepts of a change in the nature of a thing and a change in its own pattern of interaction with the world, with the consequence that regularities have to be treated as accidental persistences of events for which there is no rational explanation [14]. Realists dispense with the Humean metaphysical prediction for atomism, and causation is understood instead as the necessary ways-of-acting of an object which exist in virtue of its nature. That is, causation is not conceptualised in terms of a relationship
between separate events 'C' and 'E', but in terms of the changes in each of 'C' and 'E'. Gunpowder has the 'causal power' to explode in virtue of its unstable chemical structure. Copper can conduct electricity because of the presence of copper ions in its chemical structure. Whether either of these causal powers are ever 'realised' or 'activated' depends upon contingently related conditions, such as the presence of oxygen, low humidity and a spark in the first case, and an electric current in the second. Because the conditions are independent of the causal powers, the succession of events cannot be known just on the basis of knowledge of the causal powers. So it is contingent that gunpowder ever explodes, but in certain conditions it will do so necessarily.

Scientific 'laws' are therefore not understood as well-corroborated, universal empirical regularities in patterns of events, but as statements about mechanisms.

The citation of a law presupposes a claim about the activity of some mechanism but not about the conditions under which the mechanism operates and hence not about the results of its activity i.e. the actual outcome on any particular occasion. [15]

The essential characteristic of law-likeness is not universality but necessity. This necessity has nothing to do with the logical necessity which may hold in the relationships between statements, for what happens in the natural world has nothing to do with the statements we use to describe it. Rather, it is natural necessity. By this we mean that a particular substance or object could not be what it is unless it had that particular power, that way-of-acting. If a substance cannot conduct electricity, it certainly cannot be copper. It is logically possible that the world - including copper - may suddenly change into something different, but while the substance is still copper it must have these causal powers and a specific nature. That this is not simply a matter of tautology will be explained later.

The realist account of scientific laws is compatible with the marxian notion of laws as tendencies. The law of value does not refer to an empirical regularity, nor a generalisation, nor a trend, but a mechanism which operates in virtue of the competitive nature of capitalist commodity production. The effects produced by it at the empirical level depend upon contingently related conditions, including those produced by other mechanisms which are sometimes called 'counteracting tendencies'. In the case of gunpowder, the presence of oxygen, low humidity and a spark in the first case, and an electric current in the second. Because the conditions are independent of the causal powers, the succession of events cannot be known just on the basis of knowledge of the causal powers. So it is contingent that gunpowder ever explodes, but in certain conditions it will do so necessarily.

When we discover such natural necessities we frequently make what were previously understood as contingently related elements part of the definition of objects; indeed, one might say that progress in science, in terms of reduction of the burden of facts, depends on this [18]. That a father is a man who has or has had children is not just a tautology, for if it were, science could develop simply by inventing tautologies freely at will. But it is always an empirical question whether any real object is like our definitions. In this way, natural necessities can be 'taken up' into the language in the form of conceptual necessities.

'Could the relation between the nature of an entity and its powers be naturally necessary, we hold this to be an a posteriori truth about the entity, and so it must be the case that in that world such an entity is capable of an alternative, earlier and more naive description, under which its nature thus described is merely contingently related to those of its powers and liabilities which are later discovered to be necessary consequences of its real nature.' [19]
modes of production are not nearly as limited in terms of possible forms of interlocking combinations of relations and forces of production as was originally thought [22]. It seems, therefore, that the concept 'modes of production' can be given a less crucial summarising role. It is more important to establish the actual combinations of forces and relations of production that exist and work out how they cohere and function. Trying to force aberrant facts into simple categorisations of feudal or capitalist or even into 'articulations' of several modes of production (each of whose form can be known in advance from theory) by arguing that the facts must have been theorised incorrectly is neither useful nor necessary. Banaji shows that restricted, idealised views of modes of production have inhibited the development of marxist theory of the transition between feudalism and capitalism and Third World social formations. The consequences of relegating the makes a stronger theoretical role need not be damaging (surprising though it may seem) for the essential notions of a relatively enduring interlocking of relations between people, and between people and nature can be retained using lower-order concepts or at least less restrictive formulations of 'mode of production' than is found in much marxist writing.

We can now clarify the relationship between the abstract and the concrete, and also the distinction between good and bad abstraction. Good or 'rational' abstractions should isolate necessary relationships. The concrete, as a unity of diverse determinations, is a combination of several necessary relationships, but the form of the combination is contingent, and therefore only determinable through empirical research. As such, its form cannot be assumed to have already been 'taken up' into the theoretical framework in the same way that the nature of the abstract can.

A bad abstraction or 'chaotic conception' is one which is based upon a non-necessary relationship, or which divides the indivisible by failing to distinguish between good and bad abstraction. Good or 'rational' abstractions should isolate necessary relationships. We may make historical abstractions about the form and agree that confirmations or falsifications are epistemically significant, but the testing of empirical claims made about contingently related processes need not affect our confidence in the theoretical claims. It may be important to establish what proportion of General Motors' labour force is American, but if we get it wrong, this is unlikely to warrant a challenge to basic theory.

This is not of course to say that concrete objects are unimportant - far from it; but what theory provides us with is an understanding of the concrete by means of abstract concepts denoting its determinations. In this context, the primary position of the concept of 'commodity' in Capital is rightly noted in making the point that, although abstract concepts have to be used to explain the concrete, it makes sense to start with what we have to explain. But the major theoretical issues are not about a simple category of the commodity, as it might be instantiated in, say, a car, but about the abstraction of use-value and exchange-value as its essential determinations. In Bhaskar's terms rational abstractions concern the level of the 'real' - causal powers or generative mechanisms; concrete concepts concern the level of the 'actual' - the effects, operation and activation of mechanisms, it then being contingent whether these are possible empirical objects for us [24].

Figure 1 sums up the hierarchy of types of concepts in marxism ranging from the most basic abstract concepts which refer to transhistorical necessities, through historically-specific abstract concepts, through the 'tendencies' which are the equivalents of 'mechanisms' in realist philosophy of science, to the more concrete 'level'. As we have seen, because of the historical nature of society, which historically-specific abstractions must be used depends upon the kind of basic necessary relationships which obtain at any point in time. In natural science, natural necessities are empirically discovered too, but in general, they do not change. And this is why marxist social theory (indeed, social theory) cannot take its more basic concepts for granted to the extent that natural sciences can: the concepts must change with the reality they depict, or of which they are constitutive. Although we can say that certain necessary relationships in capitalism have been 'taken up' into marxist theory in such a way that we can 'know in advance' that wherever there is capital, there must also be value-producing wage-labour, it must be stressed that this knowledge is ultimately grounded a posteriori. In like manner, given the existence of a child, we can 'know in advance' of the existence of a father, but even this knowledge is, as we have seen, an a posteriori discovery of a necessary connexion.

For marxist theory to be both concrete and causal, it needs to have at the top of the diagram are in principle revisable; they are not to be taken on faith. Necessary relationships may exist in reality but it is contingent whether we know them [25]. In moving down the diagram towards the concrete, knowledge of contingently related phenomena must be combined with knowledge of abstract necessities. These contingent relations are affected by (a) class struggle - which can also change the structures in virtue of which mechanisms or tendencies operate;
FIGURE 1: THE RELATION OF ABSTRACT AND CONCRETE

FOUNDATIONS OF HISTORICAL MATERIALISM
(e.g. concepts of people and nature)

TRANSHISTORICAL CLAIMS
(e.g. teleology of labour, social relations of production)

HISTORICALLY-SPECIFIC ABSTRACTIONS
OF NECESSARY/INTERNAL RELATIONS
(e.g. capital-wage labour)

TENDENCIES/MECHEANISMS OPERATING IN
VIRTUE OF NECESSARY RELATIONS:
x_1, x_2, ..., x_k (e.g. law of value)

SYNTHESIS OF TENDENCIES AND CONDITIONS
('unity of diverse aspects') to form
CONCRETE CONCEPTS: z_1, z_2, ..., z_k

CONJUNCTURES
(within - in Bhaskar's terms - 'open systems')

* The theorisation of these, and their explanation by means of abstraction, is often not the sole prerogative of marxism.

(b) theory itself, as in praxis; and (c) future knowledge, which, for the reasons given by Popper, is unknowable now. Some of these conditions may be satisfactorily theorised outside marxism, others may need re-theorising. And of course, as the example of the critical insights of marxism generated by feminism show, the direction of conceptual change need not be one-way. So, for example, although we can say from basic theoretical propositions about capitalism that the law of value forces a continual restructuring of capital upon firms, we cannot know in advance what form that will take because it depends, among other things, upon the nature of technology, which in turn depends on the growth of knowledge; we simply have to go and find out through theoretically-informed experimental research.

Marx's own position on this movement down the diagram from the abstract to the concrete is ambiguous in terms of whether he overlooked this essential element of contingency. What Marx considered to be '... obviously the correct scientific method ... [led] ... from abstract definitions by way of reasoning to the reproduction of the concrete situation.' [26]

'By way of reasoning ...' suggests a movement which is purely internal to thought, which cannot or need not ask empirical questions [27]. However, elsewhere in the Introduction, Marx says that the 'concrete in thought' is a product of the working-up of observation and conception into concepts' [28]. The latter interpretation is the only one which can make sense of his concrete historical studies. So, movement between the levels of the diagram does not generally involve moves of deductive logic. To move from transhistorical theoretical claims (e.g. 'All production is carried out under social relations') to historically-specific claims ('capitalist production requires a propertyless class of workers'), we have to add historical information which is not implicit in the premises of the transhistorical claims [29].

There is also a more general reason why these things cannot be known in advance, and again it depends upon a distinction between necessary and contingent relations between things. 'It is because things cannot be reduced to the conditions of their formation that events are not determined before they are caused to happen. This fact accounts for both the temporal asymmetry of causes and effects and the irreversibility of causal processes in time.' [30]

So, while everything is 'determined', things are not pre-determined except where, as in experiments, conditions are controlled. The chemical structure of gunpowder 'determines' its explosive causal powers, but whether it ever does explode is not thereby pre-determined.

Although the 'knowledge' represented in the diagram centres on marxism, it should not be seen as self-contained but as extending horizontally and vertically into knowledges with different domains such as the natural sciences and psychology. These 'discourses' are neither reducible to a single discourse nor are they discrete. Often discourses which compete in the same domain share an agreement or indifference towards certain concepts which they both use. Non-marxists may accept some of the most
basic claims of historical materialism e.g. about transhistorical necessities or about some limited aspects of very specific concrete concepts, but the 'penumbra of meaning' of these concepts will vary according to the other elements of their discourse.

Marxists, qua marxists, are unlikely to question the technical knowledge of an engineer although they may have different interpretations of the social context of engineering. In neither case need there be incommensurability between the two discourses, and in the first case there may be mutual agreement and/or indifference. In both cases Marxists may have to draw upon this non-marxist knowledge, to understand their own concerns (e.g. restructuring of capital) when moving from the abstract to the concrete. The knowledge represented in the diagram also reflects a 'stratification' of the real [31]. What Marxism may take as 'a given' (e.g. human anatomy) may be the prime object of study for another subject working upon a different stratum. The existence of this stratification need not mean that every event in society can only be explained through a regress which goes back through these strata to some first cause, because each stratum is, despite being constituted through processes at another stratum, irreducible: it has emergent powers. Just as water has powers irreducible to those of hydrogen and oxygen; just as human beings as organisms have powers irreducible to the chemical processes which constitute them, so certain combinations of material and social relations produce social processes which escape characterization [32]. And it's in virtue of these emergent powers that 'higher stratum objects' intentionally or unintentionally react back upon lower strata, not by 'breaking' natural necessities, but by exploiting contingency at the lower levels.

(Although it is far beyond the scope of this paper and its author to outline an aetiology of society which would substantively specify this stratification, a word of caution is needed to guard against any unexamined over-hasty reinterpretation of (Althusserian) 'levels' of the 'economic' 'political' and 'ideological' as distinct strata, for they may possibly be more accurately seen as different parts of the same stratum.)

It should also be noted that there is no necessary correspondence between the abstractness (or 'onesidedness') of a concept or the 'height' of the stratum to which it refers, and its social significance. It is only because we usually forget the abstract nature of many commonsense that we tend to associate abstractness with 'theoretical significance'. Adorno provides a convenient illustration: 'The category 'societies with a division of labour' is of a higher and more general order than the category 'capitalist society'; but it is a less, not a more essential one, with less to say about the lives of human beings and what threatens them - without this implying that a lower order category such as 'urbanism' has more to say on the subject. The degree of abstraction of sociological categories varies neither directly nor inversely with their contribution to the understanding of society.' [33]

On this view of theory, the conceptualisation of necessary relationships is absolutely critical. The identification of mechanisms depends upon careful description of the objects and relationships in virtue of which they act. In contrast, description of entities is treated as an unimportant preliminary to theorising in empirical science. 'Facts' are assumed to be capable of simple, atomistic description, and theoretical issues are seen as problems of ordering these facts. In this way, many necessary relationships are overlooked or distorted; usually by tearing objects from the context upon which they are dependent and ignoring their historically-specific character.

One of the most striking things about Marx's work is the thoroughness of this basic description. Exchange-value is examined in terms of what it 'presupposes' - private property, division of labour, production of commodities etc. The passage in the 1857 Introduction documenting the ways in which production, distribution, exchange and consumption interpenetrate and presuppose one another is a particularly good example; in noting that distribution was first and foremost a distribution of the means of production, and hence a relation within production, Marx demonstrated the existence of an internal relation [34].

From the standpoint of modern bourgeois social science, this form of analysis has an unfamiliar aspect. For example, consider the following:

'All production is appropriation of nature on the part of an individual within and through a specific form of society. But it is altogether ridiculous to leap from that to a specific form of property e.g. private property.' [35]

'... that there can be no production and hence no society where some form of property does not exist is a tautology....' [36]

'The obvious, trite notion: in production the members appropriate (create, shape) the products of nature in accord with human needs:....' [37]

Marx clearly regarded such statements as an essential foundation, but also as unexceptional, 'obvious', 'trite'. And yet so much of liberal social science answers not only to these written traditions. Entire social theories have been constructed in which society is 'organised' but somehow not dependent on the appropriation of nature for its existence; and the treatment of production and distribution as simply externally related is still common.

On first encounter, much of this repetitive, pain-taking - even ponderous - description of basic entities and relationships does seem 'trite' as Marx admitted: do we really need to be told that exchange-value presupposes a division of labour; or that language cannot exist for an individual? But it is these foundations that provide a means of distinguishing rational abstractions from the chaotic conceptions which characterise 'sciences' which adopt a casual attitude towards initial conceptualisation, or at worst, as in many of the economic, reduce it to a matter of defining mathematical notation-'"K" is capital and capital is "K", and let's get on with the model'.

Yet if we refer back to the quotations from the Grundrisse and the passages in which they occur, an ambiguity in Marx's discussion can be seen. By referring to the relationships as 'tautologies' in which 'categories' 'presuppose' one another, it appears that they are conceptual necessities and nothing more. The theory has the appearance of what Marx himself called an a priori construction. Nevertheless, consideration of instances of these conceptual connexions shows, as we have seen, that they are based on real, necessary connexions [38]. And indeed, many theories appear to be largely a priori constructions. This is not unusual, and it need not be a cause for concern unless, like Humeans, we render natural necessity unintelligible by adopting an atomistic ontology and hence make it impossible to recognise that some conceptual necessities have a real basis [39]. The important question is How, if at all, are they grounded in necessary relationships? How are the latter 'taken up' into the theoretical concepts? [40]. Provided that those relationships between objects which are genuinely independent are not treated as necessary connexions, so that empirical questions are prejudged in an a priori manner, the generally a priori character of a theory need not be a problem.
It is only if laws are understood as referring to mechanisms, and not empirical events, that the manifestly successful applications of scientific knowledge in systems where empirical regularities are rare become intelligible. Indeed, it is only if mechanisms operate in such 'open systems' that successful lay interventions in nature in the form of labour are possible.

A second sense of 'empirical', which can be equally confusing, is 'that which might be other than it is'. Many interpretations conflate and confuse (i) questions of contingency if and where it occurs in the ontological domain (i.e. in the relations of objects and events) with (ii) questions of contingency or better 'fallibility' in the epistemological domain (i.e. in the relation between the world and our knowledge). (i) and (ii) are themselves only contingently related, and furthermore, within (i) there is also the common non-sequitur mentioned above in which it is assumed that because it is logically possible that the world itself may suddenly change, everything in our world is contingently related. Another source of confusion is generated where the empirical is associated with that which is referred to by logically contingent statements in contrast to the necessary truths of analytic statements.

On our account, both contingency and necessity characterise the real as a whole, and not just that part which happens to be empirically observable: much of the 'other than it is', but there are also natural necessities. It is contingent whether we know either case, but whichever is the case has nothing to do with logical relations of statements, for, as we saw earlier, necessity in the world can be described by either logically necessary or logically contingent statements.

The Theoretical

We have argued that theory makes its strongest claims about [43] necessary relations in the world and about the natures of the objects in virtue of which they obtain. It does so by 'anchoring itself' upon abstract concepts, but these, on their own, permit less committal statements about contingent relations occurring in common concrete configurations. The latter require 'empirical analysis'.

This interpretation had several corollaries:

(1) Given that theory makes claims about the real and is not a heuristic aid for ordering a privileged empirical knowledge, the relation between observation and theory is not to be understood in terms of correspondence rules but in terms of statements about causal connexions between real objects.

(2) With the development of conventionalist critiques of positivism and the renewed interest in the history of science by philosophers of science, it has often been noted that scientists sometimes put more faith in their theories than in observations, even where the latter appear to contradict the former. This behaviour has sometimes been rationalised as a healthy 'tenacity' which protects newly-emerging theories from premature refutation. Given our agreement with the critique of theory-neutral, certain observation, this is unobjectionable. But because this critique fails to reject empiricism's flat ontology, it fails to note that the real disjunction between mechanisms and events also gives scientists good grounds for being sceptical about the significance of their non-correspondence.

(3) As they lack a concept of natural necessity and a distinction between necessary (internal) and

The Empirical

Implicit in the above critique of empiricist ontology and the discussion of laws of tendency was an attack upon the concept of an 'empirical world'. Interpreting 'empirical' here as 'that which is observable', the concept of 'empirical world' arises from an illegitimate reduction of an ontological question to an (empiricist) epistemological one. Now it would be extraordinary if 'the real' just happened to be exactly coextensive with the limits of our sensory powers. This solipsistic exclusion of a non-empirical real world also generates a whole range of problems, one of the most obvious of which is that of understanding how we ever come to discover anything new. Moreover, as we have seen, it also sequesters a notion of an identity of thought-object and real-object, and therefore implies a completed science grounded in certain or absolute empirical knowledge. However, if we accept that observation is theory-laden, such that no clear distinction between what can be observed and what can be inferred on the basis of observation can be sustained, then we must acknowledge that the boundaries of 'the empirical' are both fuzzy and changeable. What is empirical depends upon our knowledge and sensory powers: what is concrete (excluding conceptual objects) does not.

Marxism's distinction of essence and appearance and its rejection of empiricist epistemology are incompatible with the 'empirical world'. Where marxists have attempted to reject this epistemology while retaining its flat, unstratified ontology, the result has been idealist contortions where the essential and the abstract are denied any reference to real objects and are reduced to heuristic devices for understanding the empirical. In the philosophy of science, the recent development of conventionalist critiques of positivism have been based on this same incompatible combination [41].

If we do not accord real status to mechanisms and instead treat laws as statements about universal empirical regularities we run into what Bhaskar terms a dilemma of 'actualism' [42]. Faced with the conspicuous rarity of spontaneously-occurring, precise, universal empirical regularities, we can either:

(a) conclude that any contenders for the status of 'law' are thereby refuted, or
(b) conclude that laws apply only to ideal conditions equivalent to those of scientific experiments, and nowhere else.
contingent (external) relations, these philosophies have difficulty sustaining any distinction between empirical research and theoretical reflection.

4) Just as there are no grounds for identifying the concrete with the empirical, there are none for identifying the abstract level of causal powers and mechanisms with the unobservable as Keat and Urry tend to do [44].

What is theoretical has nothing to do with difficulty or unfamiliarity. Commonsense or informal knowledge contains many implicit assumptions about real necessities. Commonplaces - such as the claims that 'we must eat in order to survive' or 'we are all mortal' can therefore be, in our sense, as 'theoretical' as that knowledge of natural necessities which is the product of considerable scientific labour and which is usually exclusive to a minority and unfamiliar to the masses. In saying this, I am not trying to invest commonsense with any privileged status; it is often content with ignorance about the nature of the objects in virtue of which mechanisms operate, or else is mistaken about them, as in the characteristic error of reification of social relations and processes. I would simply wish to deny that scientific and lay knowledge are an incomensurable pair of autonomous discourses about which a priori judgements can be made. Commonsense is certainly characteristically an 'unexamined discourse', but if we try examining it, we can find examples of interpenetration with scientific discourse. The adequacy of particular lay and scientific knowledges is a substantive and not a philosophical question. We cannot simply contrast an immediately conceived 'science' or 'theory', whose privileged status is guaranteed by the conditions of its production, with 'ideology', which is similarly condemned by its conditions of production. Therefore the abstract concepts upon which we anchor our analysis may include some which are quite mundane. As we have seen, competing scientific 'discourses' at one level (e.g. social theory) may share commitment or indifference to concepts which are crucial at another. Without a recognition of the stratification of the real, such asymmetries tend to be interpreted as evidence of the autonomy and incomensurability of discourses or paradigms in relation to some flat ontology. The fiction of incomensurability arises from: (i) a flat ontology; (ii) an unawareness of the hermeneutical character of discourse; (iii) a blindness to the mundane assumptions common to several discourses produced by the reduction of a discourse to those concepts which are unique to it; (iv) the mistaken belief that discourses must be logically continuous for translation between them to occur; (v) a conception of networks of concepts composing discourse existing in a kind of equilibrium, rather than differential stress.

Critical implications

This discussion has important critical implications for the way in which analyses and explanations of the concrete are conducted. Neither empiricism nor rationalism are of any help here; the former cannot comprehend the role of theory, the latter cannot grasp how theory has any purchase on the real. We have seen that the false view that the move from abstract to concrete is deductive and purely internal and unique to marxist theory is based upon notions of observation as entirely theory-determined, and discourses as entirely discrete and incomensurable. These views legitimise a kind of reductionist or 'pseudo-concrete' analysis in which the concrete is simply reduced to the abstraction. The extent of contingency in the systems of interest is radically underestimated. But the mediation of discourses required by concrete analysis and the non-deductive relation between abstract and the concrete need not be seen as problems. On the contrary, they prevent a blinkered imprisonment within the 'self-ratifying circles' [45] of the consecrated abstract concepts of marxism. 'Pseudo-concrete' research produces precisely that 'forcing [of] the significance of certain events' (Sartre), that 'intellectual agoraphobia' (Thompson) or that 'naive examples' of which we are often accused for organisation. This is not to deny that theoretical reconstitutions of higher-order abstract concepts are worthwhile, only that they cannot provide the sole basis for the generation of new concepts. These have to be integrated into the existing networks of concepts if they are to be meaningful and usable, and the integration usually involves meaning change in the network rather than a simple accretion of knowledge. But the integration should not take place only 'from above', in terms of Figure 1, but should also be connected to more mundane and concrete concepts.

A one-sided integration has characterised much of the recent writing on the state which has shown that the hypotheses were already implicit in existing theory, and only needed a theoretical exegesis, an appropriate 'reading', to 'draw them out' [46]. It is certainly important to realise that the state has its own 'labour processes', that it is the 'condensation of class struggle' or an 'instrument of the dominant fractions of capital', or whatever, but it is also important to relate it to 'lower-order' concepts if these ideas are to inform concrete study. And if these 'lower-order' concepts refer to some of the same objects (differently understood, of course) as bourgeois analyses e.g. 'governments', 'civil service', this does not make the analysis irredeemably 'empiricist'. These 'lower-order' concepts are certainly not 'operationalisations' of 'theoretical terms' (which is how empiricists would see the matter), but different aspects of the object of study.

Reductionism in Economic Analysis

One of the main forms of reductionism in marxist 'economic' analysis is an interpretation of empirical patterns as simple manifestations of the abstractions developed in Capital. A common tendency (fortunately becoming rarer now) is the making of cavalier, unqualified assumptions about value movements on the basis of price movements of physical volumes of plant. Given that mechanisms and their effects rarely correspond spontaneously in a one-to-one fashion, this generates an actualist dilemma: either the abstract tendencies do not exist as such or else the empirical phenomena have to be distorted so that they are made to reflect the abstract. This dilemma is familiar in concrete studies of class but it has also characterised neo-marxist analyses of uneven development. In the latter case, at worst, ideal type representations of contingent empirical patterns of development (such as centre-periphery, metropolis-satellite forms) are assumed to be the unique expressions of capitalist development. The actualist dilemma is confronted when concrete analysis is confronted with the abstract propositions of Marx's Capital. Much the same result is produced where the effects...
of a necessary relation forming part of an open system (i.e. one whose internal and external parameters are inconstant) are projected onto the whole of the system. For example, it is common to note the necessary contradiction of capital accumulation in 'Newly Industrialised Countries' in which the cheapness of the labour power both blocks as well as assists accumulation because it restricts the size of the market. While it is true that the low-paid cannot generate sufficient purchasing power, it is contingently whether there may be sufficient numbers of other people in those countries who are affluent enough to create an internal market. The fact that the latter cannot be known in advance on the basis of knowledge of abstract necessities creates traps for pseudo-concrete research [47].

This failure to acknowledge contingency in economic systems is not only produced by an implicit concept of an empirical world. Particularly in dependency theory it also derives from a theorisation of tendencies or mechanisms which ignores much of the marxist theory which explains how they are grounded. The tendencies float uneasily and unconvincingly between the abstract and the concrete, neither grounded in the former nor engaging with the latter [48].

Common to these approaches is the expectation of a 'theory of uneven development' which pre-empts its concrete form, and which is as misguided as the expectation of a 'theory of ideology' which specifies, in advance, its content. Once again, abstraction can only be expected to help explain the structures or mechanisms which produce the concrete [49].

Mandel's Late Capitalism [50] is certainly not in this league, for it attempts the ambitious project of explaining concrete developments in the world economy through abstraction by reference to movements in value. However, the success of this project is considerably hindered by his ambiguous usage of the term 'abstract and by his empirical treatment of tendencies'.

'From the standpoint of historical materialism, "tendencies" which do not manifest themselves materially and empirically [Are these terms meant to be equivalent?] are not tendencies at all. They are products of false consciousness, or for those who dislike that phrase, of scientific errors.' [51]

Having excluded the possibility of a non-empirical real world, he was then forced to regard abstract concepts which refer to it as having no explanatory purchase on the concrete. 'As soon as "laws of development" come to be regarded as so abstract that they can no longer explain the actual process of concrete history, then the discovery of such tendencies ceases to be an instrument for the revolutionary transformation of this process. All that remains is a degenerate form of speculative socio-economic philosophy in which the "laws of development" have the same shadowy existence as Hegel's "world spirit"...' [52]

Here, Mandel comes face-to-face with the idealist alternative generated by the retention of an unstratified ontology of the empirical. He obviously sees in an unaccustomed implosion, I am led to avoid retracting laws of tendency he turns a blind eye to the conspicuous absence of empirical regularities or simple empirical manifestations of laws of tendency. In other words, his response to the actualist dilemma is to ignore its existence. And in the rest of the book, 'tendencies' appear to be inferred from or read into empirical patterns exhibiting very little regularity [53]. But this is not necessarily wrong for given the non-identity of mechanisms and their effects, empirical regularities are neither necessary nor sufficient for retreading the existence of mechanisms.

An associated misconception about abstract/concrete and theoretical/empirical relations in marxist 'economic' theory is 'deductivism' [54]. Here theory is supposed to provide a set of propositions from which empirical forms can be logically deduced, and it is assumed that this deduction provides an explanation. From the statement 'All capitalists employ wage-labourers', we can deduce that any particular capitalist must employ wage-labourers, but this does not explain why this is so. Therefore, the point which has often been made in debates about value-theory, that prices cannot be deduced (or, which is the same thing, 'calculated') from values, does not count as a legitimate argument against its explanatory ability; it could still explain price movements (though this is not its intention), the origin of profit etc [55]. The theory could only be expected to be formulable mathematically in such a way that concrete movements were calculable if real world causal processes happened to conform to the relations of logic. However, the uneven relation of use-value and exchange-value guarantees that this cannot be so.

In theoretical discussions (e.g. of reproduction formulae) we often abstract from this unevenness by assuming a fixed relationship between use-value and exchange-value, as Marx often did [56], but while this may be a convenient heuristic aid, it cannot possibly be used as a simplifying assumption in the study of concrete development. Capital accumulation in the face of the pressure of the law of value depends upon a changing relationship between use-values and exchange-values. In virtue of this: 'There is, then, no necessary inner relation between the value of the constant capital, nor, therefore, between the value of the total capital (= c+v) and the surplus value.' [57]

The element of contingency introduced by this unevenness is also ignored by those accounts of the tendency of the rate of profit to fall which turn the contingent empirical questions of the relation between technical composition and organic composition into a priori ones.

Deductivism's associated neglect of careful initial description and conceptualisation is a particularly common occupational hazard in mathematical analysis in marxian economics, where conceptualisation is so often made the slave of quantification. The quantities easily become little more than 'variables' and 'functions' which take on a life of their own, cut off from the theoretical setting of Marx's abstractions which exhaustively examine their contexts and determinations [58]. And the matter is made all the more complicated by the fact that exactly the same kind of 'abstraction' from real determinants actually underpins the concrete social practices which produce exchange-value [59]. In other words this misleading form of abstraction, this chaotic but 'practically-adequate' conception, is actually constitutive of marxism's object.

Monism

In all these cases, the failure to acknowledge contingent relations between the abstract and concrete generates a monism. If the mechanisms abstracted can in fact lead to several different concrete results, then the denial of this contingency will generate several competing monisms, each able to cite (carefully selected) 'empirical evidence'. And the reductionist character of this kind of analysis will also seriously underestimate the degree of internal differentiation and flexibility in its objects.

The political consequences of monism and
Footnotes

1 Search for a Method, 1965, Vintage, p.27; 'studying facts' now seems unsatisfactory, but I don't think this vitiates his criticism.

2 Ibid. p.28, emphasis in original. Also note the following widely-quoted passage: 'Valéry is a petit bourgeois intellectual, no doubt about it. But not every petit bourgeois intellectual is Valéry. The heuristic inadequacy of contemporary Marxism is contained in these two sentences. . . . Characterising Valéry as a petit bourgeois and his work as idealist is, the Marxist will find in both alike only what he has put there.' (Ibid. p.56)


4 The Poverty of Theory, Merlin, 1978, p.305. A daft title, some polemical excesses, and a general failure to recognise the importance of structure (cf. the frequently within English Marxism, NLB, 1980) should not be allowed to detract from the importance of this critique as an (albeit one-sided) corrective to some of the idealist elements within Althusserianism.

5 Ibid. p.56.


9 Ibid. p.100.

10 Bhaskar, 1975a, op.cit., pp.201-02.

11 Harré and Madden, op.cit.


13 Harré and Madden, op.cit., p.110.

14 Bhaskar, 1975a, op.cit., p.95.

15 Collier, ibid.


17 Harré and Madden, op.cit.

18 Ibid. p.90.

19 Bhaskar, 1975a, op.cit., p.201.

20 It has often been said that the entire three volumes of Capital are a polemic against capitalism.

21 J. Banaji, 1977, 'Modes of Production in a Materialist Conception of History, Capital and Class 5, pp.1-44.

22 Bhaskar, 1979, ibid., p.54.

23 Bhaskar, 1975a, op.cit., p.52.


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