Paul A. Lewis

ON THE MERITS OF CRITICAL REALISM AND THE "ONTOLOGICAL TURN" IN ECONOMICS: REPLY TO STEELE

ABSTRACT: *The discipline of economics can benefit from a more explicit, systematic, and sustained concern with ontology; that is, with the philosophical analysis of the nature of the social world. Contrary to the argument advanced in these pages by Gerry Steele (2005), critical-realist ontological analysis encourages fruitful economic research in a number of ways: by helping to identify research methods suitable for analyzing economic issues; by promoting the development of key substantive economic concepts; and by helping to reveal and resolve inconsistencies in existing research.*

The belief that social research can benefit from a more explicit, systematic, and sustained concern with *ontology*—one that is concerned with the nature of the social world—has become increasingly widespread within the discipline of economics. Growing numbers of heterodox economists, along with historians of economic thought and economic methodologists, are reflecting explicitly on the nature of social beings.

One such "ontological turn" is the project of *critical realism*, developed by a group of social scientists based primarily at the University of Cambridge. Critical realists believe that economic researchers should use tools that are tailored to suit the nature of the social world, rather than elegant models that may have little connection to reality. To that end,

Paul A. Lewis, paul.lewis@kcl.ac.uk, King's College, University of London, London, WC2R 2LS, thanks Bruce Caldwell, Steve Fleetwood, Tony Lawson, and Jochen Runde for helpful assistance and comments.

Critical Review 23(1-2): 207–230
ISSN 0891-3811 print, 1933-8007 online

DOI: 10.1080/08913811.2011.574493

they suggest two related roles for ontological inquiry. The first is to use philosophical arguments to develop an account of the ontology of the social world. The second is to analyze the (often unrecognized) ontological presuppositions of particular research methods, asking what the broad nature and structure of the social world must be if those methods are to be fruitfully applied to it. The results of these two lines of inquiry are then compared to see whether the philosophical presuppositions of particular methods dovetail with the actual ontology of the social world.

The critical-realist approach has attracted criticism as well as support, including heterodox economist Gerry Steele's "Critical Thoughts about Critical Realism" (2005).

There is a protean quality to Steele's argument that makes it difficult to pin down. Nevertheless, his criticisms of critical realism—and particularly its application to economics—seem to fall under three main headings.[1] The first is that critical realists assert a priori an account of the social world and treat it as being immune from falsification. This line of criticism will be considered in Section I below. The second line of criticism, addressed in Section II, centers on what Steele perceives as critical realists' unthinking, a priori rejection of formal mathematical and statistical modelling, foreclosing out of hand the possibility that statistically detectable patterns of events can inform social-scientific analysis. Third, Steele appears to claim that critical realists' methodological guidelines are so general that they provide little assistance to social scientists, and thus do not advance social and economic research. This charge will be examined in Section III and IV.

I will argue that many of Steele's criticisms seem to be based on misunderstandings of critical realism. There may be more common ground between critical realism and Steele's own position than he realizes.

I. CRITICAL REALISM, SOCIAL ONTOLOGY, AND THE NATURE OF TRANCENDENTAL ARGUMENTS

The ontological turn sponsored by critical realism involves a shift away from approaches to economics that adopt a particular methodology a priori toward what critical realists term *realist social theory*: that is, approaches whose methods are tailored to suit (what philosophical

argument suggests *ex post* are) the broad contours of social reality. As Tony Lawson (2003, xx) explains,

> in its most general formulation, my opposition is directed at any kind of *a priori* dogma. The realist approach I defend is contrasted with any kind of ungrounded insistence that certain methods only, or almost only, should be followed.[2]

The fact that critical realists place such heavy emphasis on the importance of avoiding a priori positions makes Steele's charge that critical realism (CR) displays "an unfortunate tendency toward extreme apriorism" (Steele 2005, 135) puzzling, to say the least. The arguments used by critical realists to justify their preferred accounts of the nature of the social world are in fact a posteriori rather than a priori in nature.

Critical realists do use what are known as *transcendental arguments* to support their social ontology. As their name indicates, however, these are *arguments*, not mere assertions, and are viewed as being fallible. Transcendental arguments consist of a posteriori observations of widespread features of the social world—"generalised features of experience," as Lawson (1997, 159; 2003, 33) terms them—as well as an account of what (the nature of the) world must be like for those common features to be possible. Such features include routines and rituals; the segmented and other-directed nature of many social practices; the fact that these practices rarely change while the individuals engaging in these practices change; and the "openness" of the social world, by which I mean that it is complex and does not often display event regularities. These features of the social world can be rendered intelligible only if it is acknowledged that the world has certain broad features: namely, that it is in large part structured; holistic or internally related; and inherently dynamic or processual.

Consider, for example, the fact that people repeatedly engage in various types of social practice, such as turn-taking in conversations, driving on a particular side of the road, paying for goods with money, and working for pay (Lawson 1997, 159-63; Lawson 2003, 35-38). In this case, a transcendental argument would consist of asking what the social world must be like for such widespread routinization to take place. The answer, critical realists aver, lies in the existence of often-stable *social rules*. For it is the fact that people (often) follow social rules—understood as widely known injunctions such as, "If x [driving], do y [keep to the

left-hand side of the road] under condition z [in twenty-first century Britain]."

These rules, critical realists contend, are non-empirical in nature; they are ontologically irreducible to patterns or regularities in people's actions. If the rules *were* reducible to behavior, how would we make sense of those not uncommon situations where the majority of people behave in ways that are *not* in conformity with prevailing social rules? For instance, it is hard to render intelligible workers' threats to work strictly by the rulebook during industrial disputes without recognizing the existence of rules of workplace behavior that are not normally adhered to, and are therefore irreducible to normal workplace activities, but that can nevertheless be used to guide and inform behavior if workers believe that circumstances warrant it. That such situations take place indicates that social rules are ontologically distinct from social practices, and that they are drawn upon—either relied on or reacted against—when people act, thereby shaping, without precisely determining, their conduct.

On this view, the social world is *structured*—it displays ontological *depth*—by virtue of social rules, relations, and positions that consist of more than human actions. More specifically, transcendental argument suggests that the social world can be divided into three ontologically distinct domains: the realm of the *actual* (real states of affairs and events, including behavior and social practices); the *empirical* (our perceptions of the real); and the realm of the non-actual real (the underlying, non-empirical social structures). A second transcendental argument suggests, moreover, that the segmented and other-directed nature of many social practices can be rendered intelligible only if the social world consists not only of social rules and practices, but also of (often internally related) positions, such as those of student and teacher, landlord and tenant, employee and employer (Lawson 1997, 163-65; idem 2003, 38-39).

Human Freedom and Knowledge

Critical realists also maintain that the social world is an *open* system, defined as one that displays few sharp, stable event regularities of the form, "Whenever event or state of affairs *x*, then event or state of affairs *y*." (Systems in which event regularities obtain are said to be *closed*.) This claim is supported by the observation that the vast majority of empirical

relationships estimated by econometricians tend to break down when new observations become available. "This failure to turn up enduring social event regularities of interest is an *ex posteriori* state of affairs . . . a (fallible) observation" (Lawson 1999, 221–22; also see idem 2003, 15, 17, and 22).

The observed openness of the social world reflects the fact that social systems are multiply caused, evolve under the impetus of internal and external forces, and are subject to the influence of human agency. Let us consider the latter: the fact that people have the capacity to choose what they will do. Like many heterodox economics, critical realists contend that the possibility of genuine choice requires that, if in any given circumstances (x), a person chose to do *y*, then she could have pursued a different course of action (not-*y*). But if that is indeed the case, then the possibility of genuine choice presupposes that the socio-economic world is open (Lawson 1997, 8–11). Steele (2004, 1033–35) himself subscribes to the view that people are not automata, but are active beings with the capacity to change their minds, rendering the social world open.

Purposeful human conduct also presupposes that people have some (albeit fallible) idea of the likely consequences of their actions. The social world must, therefore, possess some stable and enduring features, a knowledge of which can inform and guide people's decisions. And if event regularities are relatively rare in the social world, then the relevant objects of knowledge must be non-empirical. More specifically, critical realists argue that people's actions are guided by their knowledge of non-empirical social structures such as social rules (Lawson 1997, 30–31 and 56–58). For example, long-term contracts are a social institution that enables economic actors to secure a degree of control over their future income and expenditure (in the case of households) and revenues and costs (in the case of firms), providing them with a measure of assurance about the future consequences of their actions. Such contracts do not tie down the future completely, and so do not give rise to stable event regularities. There always remains the possibility, sometimes realized, that one or more parties will unexpectedly renege on their contractual commitments. Or as Steele (2005, 150) puts it: "Surprises . . . are ever-present in open systems." However, in conjunction with the broader network of social rules that constitutes the legal system, contracts *do* circumscribe the range of outcomes that might flow from a particular course of action, enough to furnish people with the confidence required

to act in a purposeful, goal-driven fashion (Runde 1993, 388-93; cf. Hayek [1955] 1967, 17-19; idem 1976, 130).

The Importance of Social Structures

While critical realists do not rule out a priori the possibility, mentioned by Steele (2005, 145-46), that people's actions may at times be guided by (their awareness of) patterns at the level of observable events, they argue that, because of the restricted, partial, and unstable nature of such (demi-)regularities,[3] most of the stability in the social world is to be found in non-empirical social rules and institutions. For critical realists, therefore, it is people's often tacit knowledge of such rules and institutions—their knowledge of the legal system, for example—or of the nature of the employment relationship in capitalist economies—that principally informs their actions, not calculations of expected profitability or utility based on their apprehension of patterns in the form, say, of (stochastic) event regularities (Lawson 1998, 357-62; idem 1999, 221-22; Lewis and Runde 2007, 176n15). Once more, Steele (ibid., 146) acknowledges at least part of this point, noting that "the persistence of general patterns [of events] does not necessarily mean fine-grained forecasts can be made," and remarking of modern industrial economies that "the complexity of large-scale interaction precludes accurate economic forecasting." But Steele leaves open the issue of what informs people's actions when accurate forecasts cannot be made. And it is in answering this question that critical realists emphasize social structures.

The importance of underlying, non-empirical social structures is also indicated by the distinction, raised by Steele (2005, 144-46), between, on the one hand, "spurious and potentially misleading" event regularities—which, according to Steele, do not provide sound guidance for how people should go about achieving their goals—and, on the other hand, those regularities that *are* potentially informative. But how can people differentiate the true from the misleading regularity? The answer lies in their often tacit knowledge of a causal mechanism or structure underpinning and giving rise to the pattern of events in question (Cartwright 1979). For instance, while there may be a close correlation between longevity and owning a particular type of health-insurance policy, it seems unlikely that many people would think that purchasing such a policy would be an effective strategy for achieving longevity. The

reason, of course, is that people are aware that there is no biological mechanism by which purchasing a particular type of insurance policy will increase one's lifespan; and they are also aware that there *is* a social mechanism—due to the (self-imposed) rules governing how insurers decide who is eligible for particular types of policy—ensuring that certain varieties of policy are available only to people who, for reasons quite independent of their ownership of the policy in question, are likely to enjoy considerably longevity. This example indicates that people's knowledge of underlying social rules and mechanisms (as distinct from their awareness of patterns at the level of events) enables them to successfully go about their business.

Viewed in this light, Steele's (2005, 145-46) claim that the actuaries who draw up the statistical tables used in determining the premia for motor-vehicle insurance do so without regard for underlying causes, relying solely on the existence of statistical correlations between traffic accidents and driver's age, engine size, and the like, seems implausible, not least because it is principally by attending to the underlying causal mechanisms that they can discern whether the correlations in question are spurious or reliable. Factors like driver age, engine size, and so on, are included in the statistical tables used by actuaries not simply because they are correlated with the incidence of traffic accidents, but also because actuaries know of a causal mechanism linking each of the factors in question to a propensity to have an accident. In contrast, even if a correlation were discovered between the number of letters in a driver's name and the likelihood that she would have an accident, it would most likely be dismissed as spurious and excluded from actuaries' tables, at least until some plausible causal mechanism between the two were uncovered. Basing premia on correlations between engine size and the incidence of accidents is an effective strategy for insurance companies to increase their profits, whereas setting premiums on a correlation between eye color and accident rates is not because there is a causal relationship—as distinct from a spurious correlation—between the two in the former case but not in the latter (Cartwright 1979; Sayer 1992, 158-60).[4]

This explanation of actuarial judgments does not necessarily undermine critical realists' claim that the social world is open because of the ever-present possibility, sometimes spectacularly realized, that unforeseen events can cause the breakdown of the empirical relationships upon which insurers' decisions are based. For instance, in the 1980s Lloyds of London almost went bankrupt due to unexpectedly large claims

connected, for example, with insurance policies against asbestos exposure. The unexpected surge in claims by policy-holders was precipitated by unexpectedly large legal awards made by U.S. courts, causing a breakdown in the regularities upon which Lloyds had hitherto relied in setting its premia and in deciding at what level to maintain its reserves.

The vantage point provided by critical realism suggests, then, that people continuously draw on social structures in order to act, relying on the rules of grammar to speak and write, on the existence of a banking system to cash checks, and on the legal system to facilitate enforceable contracts, to mention but a few examples. But it is equally true that human agency is necessary for the existence of social structure. Indeed, critical realists ''accept the property of depending upon human agency as criterial for the social'' (Lawson 1997, 31), defining ''social reality'' as ''that domain of phenomena whose existence depends, at least in part, on us'' (Lawson 2003, 35). According to this *transformational model of social activity*, therefore, social structures and human agents are ontologically distinct but mutually dependent (or recursively related) entities, with each being both a precondition for, and also a consequence of, the other. People continuously draw on pre-existing social structures in order to act, while their actions, taken together, lead (often unintentionally) to the reproduction or the transformation of those structures. Far from it being the case, as Steele (2005, 151) asserts, that critical realists assume that social structures ''are not themselves mutually adapted with, and thus dependent upon . . . intentional human actions,'' critical realists insist that they should never be regarded as permanently fixed, precisely because their dependency on potentially creative and thus transformative human agency implies that the scope for change is ever-present (Lawson 1997, 170-71; cf. idem 1997, 166-71; and idem 2003, 39-53).

Perhaps one reason for Steele's failure to appreciate the aforementioned points is that he has misunderstood what critical realists mean when they use the word ''transcendental'' to describe aspects of their intellectual commitments. Steele discusses the term in the following two passages:

> Consider which ontological presumptions would define a world where human fate is determined by planetary alignments. Such matters are often described as ''transcendental.'' To establish an ontology that legitimizes astrology requires an argument that transcends observable phenomena.

> Although many astronomers find astrology epistemologically indefensible to the point of being offensive, astronomy and astrology are mutually compatible at the transcendental level. The ontology in regard to the one does not compromise that in regard to the other. (Steele 2005, 137)

> CR in practice amounts to little more than the exclusive reliance on a particular ontology that, because of its (asserted) transcendental nature—such that, if it were false, experience itself would be impossible—renders CR arguments irrefutable. (Ibid., 152)

While it is hard to discern precisely what meaning Steele attributes to the word *transcendental* in these passages, he appears to be using the term to describe a property of the ontology, or account of the social world, to which critical realists subscribe—in particular the fact that it includes non-empirical structures. In a nutshell, then, the origins of Steele's erroneous claim that critical realists simply assert their preferred ontology a priori appears to lie in his having completely misunderstood how critical realists use the word *transcendental*, a misunderstanding that has led him to overlook the fact that, as employed by critical realists, the term refers to the variety of *argument* that they use to justify their ontology rather than to any specific element of that ontology per se. Steele's (2005, 142) accusation that critical realism "insists that it is possible to establish a priori the nature of underlying causal forces" can, therefore, be seen to be unfounded.

Moreover, far from "jealously protect[ing] their ontology from any kind of testing by means of the observed phenomena that it is supposed to explain," as Steele (2005, 136) asserts, critical realists acknowledge that both the premises of transcendental arguments and the reasoning involved in such arguments are fallible and corrigible:

> By transcendental argument I understand a process of reasoning concerned to elucidate the conditions [of possibility] of some generalised feature of experience. The form of argument is employed in the realist project in providing what I take to be a fallible, non-foundationalist account of reality and science. (Lawson 1999, 210; cf. idem 1997, 49-51; and 1999, 210-13).

II. ORTHDOX ECONOMICS, DEDUCTIVISM, AND THE LIMITATIONS OF FORMAL MODELING

Steele (2005, 135) also accuses critical realists of displaying "an unfortunate tendency towards extreme aprioirism" in their attitude

toward the formal analytical techniques used by orthodox economists—a failing which manifests itself most starkly in their ''categorical dismissal of event regularities per se'' (ibid., 142), and in their consequent ''insistence that closed-system models have no place in social science'' (ibid., 145). In particular, according to Steele (ibid.), ''CR is forced to the extreme of finding no value in statistical analysis.'' These claims rest on a distorted account of the arguments advanced by critical realists.

Critical realists define orthodox or mainstream economics not according to its substantive theoretical commitments to the assumption of rationality, for example, or to the analysis of equilibrium states, but according to its insistence that economic research is valid only if it relies upon formal mathematical modeling. This insistence leads mainstream economists to adopt a form of explanation that facilitates mathematical model construction: deductivism. This means that social phenomena are explained as pattern regularities that are either derived from sets of axioms or are uncovered through statistical analysis that reveals the underlying patterns.

Deductivism—or, as Steele (2005, 133) terms it, the ''orthodox deductive-nomologial (ODN) tradition''—presupposes that event regularities are common in the social (or natural) world. That is, it presupposes the widespread existence of closures in the social world (Lawson 1997, 19 and 91-93; idem 2003, 5-8). But are such closures ubiquitous? Critical realists answer in the negative for three reasons. The first is the observation, mentioned above, of the fragility of many of the results obtained by econometricians. This is why critical realists are skeptical about the ODN tradition. Far from ruling out a priori the possibility of event regularities, critical realists point to our lack of success in finding them:

> Of course . . . some constant conjunctions of events of the sought-after kind *may* come about, at least over some limited region of time-space. And, indeed, there can be no *a priori* argument to exclude such a possibility . . . [But] the most telling point against this econometrics project is the *ex posteriori* result that significant invariant event regularities . . . have yet to be uncovered in economics, despite the resources continually allocated to their pursuit. (Lawson 1997, 77, 70; cf. idem 2003, 15-22 and 54-57)

In this respect, the critical-realist position could be described in the very words Steele (2005, 148-49) uses to describe his own position, namely that it

"does not exclude the possibility of event regularities" and that such regularities are "empirically rare outside of experimental control."

Steele himself provides a good illustration of the fragility of statistical results when he discusses attempts to operationalize the quantity theory of money by estimating statistical relationships between various measures of the money supply and the general price level. The quantity theory implies that there will be a stable relationship or event regularity between the money supply and the general price level, *provided that the demand for money is stable*. But it was precisely the latter requirement that was violated in Britain in the early 1980s, when a series of innovations to the financial system led to fluctuations in the amount of money that people wanted to hold. The upshot was that, far from constituting "the most robust of economic event regularities," as Steele (2005, 147) asserts, the (empirical) relationship between monetary aggregates and the price level proved to be highly unstable (Maynard 1988, 30–35 and 98–104; Goodhart 1989, 296–98 and 312–22).[5] Moreover, it is the inability of econometricians to obtain robust estimates of the relationship between the money supply and the price level that largely accounts for the fact that "since the brief monetarist heyday of the early 1980s attempts to achieve price stability by controlling money have been abandoned."[6] The example of the quantity theory of money seems, therefore, to support, not undermine, the claim that the social world is an open system—as Steele (ibid., 147–48) ultimately acknowledges: "Because economic systems are indeed open to an endless succession of unique historical forces, statistical regularities do not serve as a credible basis for detailed forecasts and policy interventions."

Critical realists are also skeptical about the worth of formal theoretical models that postulate event regularities (as opposed to econometrics, which seek to uncover them using statistical techniques). Here critical realists join ranks with the many economists who have grown dissatisfied with the relevance of formal models to the real world (Lawson 2003, 8–11). Even Milton Friedman (1999) came to remark that "economics has become increasingly an arcane branch of mathematics rather than dealing with real economic problems." Critical realists explain this failing in terms of a lack of "fit" or conformity between the ontological presuppositions of formal models and the nature of the real world. Constructing models that conform to the deductivist-explanatory format requires economists to make a number of "closure assumptions"—for example, that people always and everywhere maximize their expected

utility, or that the economy consists of only one "representative" agent—designed to ensure that under given conditions, the homunculi who inhabit the model economic worlds always act in the same way and produce the same (probability distribution of) outcome(s). Such closure assumptions eliminate from models the complicating factors that cause irregularities in the real social world, but these assumptions are, of course, *un*representative of most of the social world.

Consider, for example, the case of general-equilibrium theory, to which Steele (2005, 134), drawing on the work of Hayek (1948), alludes. To critical realists, the orthodoxy's concern with what Hayek (1948, 50) refers to as the "admittedly fictitious" state of equilibrium is but another manifestation of its commitment to deductivism. The behavioral equations of formal modeling (people always do x in situation y) depend on the notion of an economic equilibrium (understood as a set of parameters, e.g., prices), which guarantees that people's "plans" are compatible with each other. However, the orthodoxy's deductivist reliance on the "pure logic of choice" effectively precludes a convincing account of how plan coordination is achieved in the real world, because the closed-system world presupposed by the orthodoxy's formal techniques excludes the very knowledge problems that give rise to the problem of plan coordination in the first place (Shackle 1972; Lewis and Runde 2007, 170-72). Thus, Steele's (2005, 134) claim that the analysis of equilibrium states is problematic because "causal relationships can only properly be inferred once empirical investigation has identified relevant causes" is not so much wrong as it is incomplete. True, an empirically grounded account of how people actually acquire the knowledge required to render their plans mutually compatible is necessary to understand social order. However, such understanding also requires that the deductivist "pure logic of choice" be replaced by a view of man as a rule-following animal who inhabits an open, structured social world of the sort discussed by critical realism (Fleetwood 1996; Lawson 2005, 438-42; Lewis 2011).

Are Unrealistic Assumptions Necessary for Science?

Toward the end of his paper, in a section entitled "The Artificial Nature of Economic Theory," Steele (2005, 149-50) seems to hint at a defense of orthodox economics along the lines that, because all theories must focus

on some parts of a complex world and ignore others, it is unfounded to criticize the highly unrealistic nature of orthodox economics: ''By its nature science invariably creates artificial closures from, and thus inconsistencies with, complex reality.'' However, while it is certainly impossible to comprehend something as complex as the socio-economic world in its entirety—so that it is indeed necessary for researchers to ignore certain aspects of the real world when attempting to theorize about it—it does not follow that theories must necessarily rely on assumptions that are descriptively false. This conflates abstraction with idealization (Runde 1996, 17-21; Lawson 1997, 108-33 and 227-37; Fleetwood 2001b). Abstraction is a process of focusing on particular aspects of some phenomenon, with the aim of picking out particular features while bracketing others. This is not to deny the existence of the neglected features, but to relegate them to the periphery of our attention. Idealization, in contrast, involves the ascription of features to an object that it does not in fact possess. Thus, theorists who use idealization invoke fictions—objects that exist only in the realm of ideas.

The distinction between abstraction and idealization suggests that, contrary to Steele, it is not invariably the case that social science must be inconsistent with the real world, if by ''inconsistent'' we mean that it ''uses assumptions that are descriptively false.'' For if science proceeds by abstraction, then it need only neglect some of the features of the world, rather than using models that postulate entities that are purely fictional. Steele (2005, 148) himself mentions two examples of idealization all too commonly used in the social sciences, namely ''the archetypes of holism and individualism, [which,] respectively, assert that the properties of the whole (parts) are determined exclusively by the properties of the parts (whole).'' The over- and under-socialized models of man to which these idealizations give rise are highly problematic: the former, as Steele notes, assumes that people are the mere playthings of reified social forces and, by denying people any autonomy whatsoever, effectively assumes away the problem of social order; while the latter ignores altogether the influence of social structures on people, and so also effectively precludes a solution to the problem of social order, leading to a situation in which economists are compelled to study equilibrium states in which the problem of social order is assumed to have already been solved. It is only when these idealizations are dispensed with that a satisfactory explanation of the possibility of social order can be had. Hence, only when Hayek adopted something like the transformational model of social activity,

with its view of man as a ''true individual''—neither an undersocialized atom nor an over-socialized cultural dupe, but a social animal whose actions are guided by market prices and by social rules—was he able to explain how decentralized market economies were able to generate an orderly allocation of resources (Fleetwood 1996; Vaughn 1999; Lewis 2004, 367-73; idem Forthcoming; idem 2011).

Critical realists criticize orthodox economics for yet another malfeasance. In practice, mainstream economists frequently employ methods and techniques of inquiry that are at odds with the positions they adopt in their ''official'' or explicit statements about how research should proceed (Lawson 1997, 5-8 and 36-38). For example, the practices of econometricians often contradict the classical theory of statistical inference, which provides the theoretical justification for their work. For critical realists the reason for such theory/practice inconsistencies is straightforward: given that formal, deductivist methods are unsuitable for the investigation of large swaths of social reality, orthodox economists more or less *have* to depart from their official methodology if they are to have any chance of gaining insight into the real world. Thus, critical realists argue for a new approach to economic methodology whereby economists choose methods that are ontologically consistent with the objects of analysis.

Critical realists do not cavalierly dismiss the ODN approach, but emphasize that it, like any other method, is applicable only where its ontological presuppositions are satisfied. Hence, far from adopting the ''anything goes'' approach to methodology that Steele attributes to it, critical realism *does* have normative bite, but without lapsing into a priori dogmatism (Lawson 2003, 27-33, 54-57). Indeed, the central purpose of the critical-realist analysis of social ontology is to facilitate an account of the methods that are most appropriate for producing knowledge of social reality. It is to just such an account that we now turn our attention.

III. CONTRAST EXPLANATION AND DEMI-REGULARITIES

In outlining the types of method that critical realists believe to be appropriate in the social sciences, I am picking up the gauntlet thrown down by Steele (2005, 136) when he notes that ''the challenge . . . is for critical realism to identify what *is* methodologically legitimate.'' Steele subsequently claims that critical realism fails to meet the challenge and is

"bereft of methodological principles" (ibid., 152), but this neglects its account of contrastive causal explanation; the attempts made by critical realists to lay down criteria to judge the explanatory power of causal explanations; and the scope for critical realism to be used both to clarify key (substantive) social-scientific categories, and also to identify and resolve tensions in the work of (heterodox) economists.

Recall that, according to critical realists, explaining a social phenomenon consists in giving an account of its *causal history*—that is, of the way in which the interplay between social structure and human agency influenced and shaped its development. There are two important methods to giving such an account: "contrast explanation" and the closely related notion of "demi-regularities."

A demi-regularity is a rough and ready generality, a *partial* event regularity. Examples from the social world include the fact that the jobs occupied by women are frequently, though not always, found in the secondary segment of the labor market, and that fact that the British economy has displayed lower productivity growth than most other industrial economies for much, but not all, of the period since the Second World War. The existence of such demi-regularities reflects the fact that, although the social world is open—with observable events being determined by an ever-changing mix of often-countervailing mechanisms—there are occasions when a particular mechanism has a sufficiently powerful impact that its influence gives rise to broad generalities of the type just mentioned.

Significantly, as the examples just mentioned illustrate, the majority of demi-regularities in the social world are *contrastive* in nature. Contrastive demi-regularities arise where there are two or more comparable groups or populations with similar histories and shared conditions, and where our background knowledge leads us to expect a specific relationship (often, though not always, one of similarity) between the outcomes experienced or displayed by those groups, but where we are surprised *ex post* by the relation we actually discover. According to critical realists, then, a *contrastive* is a descriptive statement of the form "*This* [the reality] rather than *that* [the expectation to which our background knowledge leads]." *Ex post*, such demi-regularities appear to be widely in evidence (Lawson 1997, 205-9; idem 1999, 233-34; idem 2003, 105-7).

The existence of such contrastive demi-regularities provides prima facie evidence that there is an unidentified causal mechanism at work whose influence accounts for the unexpected contrast between the

outcomes displayed by the populations or groups in question. Demi-regularities alert researchers to the existence of situations where there is something to be explained, and thereby help initiate and direct their explanatory endeavours. Similarly, contrast explanations are answers to questions that take the form of "Why *f* rather than *c*?" where *f* is the *fact* to be explained (e.g. relatively poor productivity growth in Britain, or a relatively high crop yield in one part of a field) and *c* is the *foil* or alternative to it (productivity growth in Britain being about the same as that achieved in other advanced industrial economies, or identical yields in all parts of the same field). Answering such questions requires the identification of the causal factor whose influence accounts for the observed contrast.[7] Contrast explanations are compatible with Steele's (2005, 149) suggestion that event regularities offer "an investigative beginning" to "important insights into social structures," provided that the "event regularities" are understood to refer not only to constant conjunctions of events of the sort presupposed by orthodox economics, but also to what seem a posteriori to be the rather more common demi-regularities.

Formulating explanatory questions in contrastive rather than absolute terms—that is, as questions of the form "Why *f* rather than *c*?" rather than "Why *f*?"—enables researchers to focus their attention on a *subset* of the mechanisms that formed part of the causal history of the focus (*f*) rather than on its entire causal history—an almost unattainable objective. For instance, rather than having to identify all the causal factors that influenced productivity growth in Britain since World War II (as would be required of an explanation of British productivity growth per se), explaining the contrast between productivity growth in Britain and in other economies is a more manageable task. The particular contrast upon which investigators focus—and therefore the casual factor ultimately highlighted by them—will depend (at least in part) on the *context* in which the relevant explanation is provided, where the context in question includes the interests and presuppositions of the researchers themselves (Lawson 1997, 209-10; idem 1999, 234-36).

It is far from the case, as Steele (2005, 144-45) claims, that critical realists fail "to give due recognition to events as indispensable constituents of real causal webs" (quoting Boylan and O'Gorman 1999, 143). Consider one of Steele's examples, namely the case where a blizzard leads many people to stay home from work. A causal history of

this bout of absenteeism would include many factors, including not only events such as the blizzard, but also underlying natural and social mechanisms, such as the physical mechanisms through which snow turns into ice, the structure of the transport system, and the procedures governing the operations of snow plows in the area affected by the blizzard. However, the particular cause highlighted by someone trying to explain people's failure to turn up for work will depend on the context, which may or may not be the blizzard itself. If the blizzard was unexpected, perhaps because it occurred in England in June, then that event itself may well be highlighted as the most interesting or noteworthy cause of the absenteeism, with the underlying causal mechanisms through which it triggered absenteeism being relegated to the periphery of investigators' attention. If, on the other hand, the problem occurred at a time and place where blizzards are common and expected—in Minneapolis in January, for example—then the relevant contrast would be between the explanandum (where the blizzard did indeed cause absenteeism) and the outcome in some other city (St. Paul, say) where the same weather conditions prevailed but did not prevent people from getting to work. In that case, attention might focus, not on the blizzard per se, but on, say, the way the two cities organized their snow-clearing operations.

Jochen Runde (1998) advances four practical criteria to use in judging the explanatory power of causal hypotheses. First, the causal factors cited in the explanation of some event or state of affairs should potentially be real aspects of its causal history. This criterion rules out explanations that locate the causes of some phenomenon in purely fictional entities that have no counterpart in the real world. Second, the factors cited as possible causes should have been not only present but also casually effective in bringing about the explanandum. This weeds out both those causal mechanisms that, although present, were never set in motion, and those whose impact was pre-empted by some other cause. Third, factors cited as causes should possess enough explanatory depth that, in their absence, the explanandum would not have occurred anyway. Fourth, causal explanations should be sufficient to account for the event or state of affairs of interest, where "sufficiency" requires, for instance, that there should not be important, unspecified links in the mechanism connecting the cause and the explanandum. Contrastive explanations would meet these four tests.

IV. STRENGTHENING HETERODOX ECONOMICS

In addition to guiding (without dictating) the general direction of research, critical realism can change research in two additional ways, both of which reflect the fact that many heterodox economists invoke arguments that presuppose a social ontology akin to that delineated in critical realism.[8]

Heterodox economists often justify their own preferred styles of economic analysis by arguing that, unlike the orthodox approach, a given heterodoxy is able to do justice to an important, substantive influence on economic life, such as radical uncertainty, entrepreneurial creativity, money, relations of power and domination, institutions, or one of the many motivations (aside from pure self-interest) that drive real people's actions. Significantly, however, these economists do not make explicit the implicit ontological underpinnings of their theories, which often share the broad properties identified by critical realism. The radical uncertainty emphasized by post Keynesians and Austrians, for instance, is a consequence of the openness of the social world; the issues of continuity and change highlighted by (old) Institutionalists reflect the dynamic or transformational nature of social objects; and the various aspects of the position of women in society highlighted by feminists are manifestations of the internal-relationality of (much of) the fabric of society.[9] In these contexts, critical realism furnishes heterodox economists with the philosophical resources required to make explicit, clarify, systematize, and so realize the full potential of their insights into the nature of socio-economic being and its implications for the appropriate methodology for economics.

The sustained, explicit reflection about ontological issues facilitated by critical realism has chiefly proven to be useful in two ways. In the first place, the abstract philosophical framework provided by critical realism has facilitated the clarification and refinement of a number of important (relatively substantive) theoretical concepts employed by heterodox economists, including capabilities (Martins 2006), competences (C. Lawson 1999), (social) evolution (Lawson 2003, 110-40), gender (Lawson 2007), households (Ruwanpura 2007), institutions (Lawson 2004), markets (Fleetwood 2006), money (Ingham 1999), probability (Runde 1999), technology (C. Lawson 2006), social order (Fleetwood 1996), and trust (Reed 2001). The lens provided by critical realism has helped heterodox economists interpret and, where necessary, reformulate their

ideas so that they are consistent with the view of the social world set out by critical realists, allowing them to articulate and develop their intuitions about key features of the social world more fully, consistently, and precisely than before.[10] Second, by helping to make explicit the ontological preconceptions of various heterodox approaches, critical realism can reveal inconsistencies between a given heterodoxy's professed worldview and the ontology actually presupposed by the analytical techniques it employs. For instance, Graça Moura (2004) has shown that the root cause of various widely noted inconsistencies in Schumpeter's writings lies in a conflict between the ontological presuppositions of the Walrasian equilibrium theory that he accepted, on the one hand, and, on the other, his broader vision of the economy as an open system driven by dynamic processes of creative destruction. A more recent example, documented in this journal, is the way in which Post Keynesian economist Paul Davidson's determination to use the (closed-system) language of orthodox economics to give analytical content to his ideas actually undermines his ability to satisfactorily express his vision of the economy as an open system in which institutions such as long-term contracts enable people to deal with radical uncertainty (Runde 1993; Lewis and Runde 1999). In such cases, critical realism may provide the intellectual resources required not only to explain but also to resolve the inconsistencies and tensions in question.

Steele (2005, 142 and 152) suggests that many of critical realism's claims and recommendations are not original to it. But the fact that critical realism resonates with many of the concerns and intuitions of others—particularly heterodox economists—implies that critical realism is grounded in their concerns and, as a result, is likely to be able to assist in their research. In this respect, critical realism compares favorably to much of the earlier (especially Popperian and Lakatosian) literature on the methodology of economics, which derived economic methodological rules from philosophical studies of the natural sciences but did not take into account the peculiarities of the new subject-matter to which they were being applied. The upshot was that the rules in question were largely (and rightly) ignored by practicing economists (McCloskey 1994).[11]

While precursors to many of the points made by critical realists are available in the heterodox literature, all too often they are implicit, fragmented, and underdeveloped. Critical realism offers a metatheoretical

framework that may enable heterodox economists to work from a single, coherent framework.[12]

* * *

While critical realism can provide guidance for social scientists, it does not purport to offer a set of rules for the conduct of research that, if slavishly followed, will yield epistemically certain knowledge and so guarantee scientific progress. It may, for that reason, leave unsatisfied those (Steele perhaps among them) who believe that methodology can be useful only if it provides strict instructions about how social science should be done. However, given the decline of the so-called "Received View," or what Deirdre McCloskey (1994) refers to as the "3' × 5' card philosophy of science," the aspiration to provide such strict rule-bound approaches ought to be abandoned; it certainly constitutes an unreasonable benchmark by which to judge the merits of critical realism. There is a difference between promulgating strict methodological rules—a commitment to which is supposed to guarantee epistemically justified knowledge—and offering broad regulative principles or guidelines about the type of methods that are likely to prove successful, and it is in the latter vein that critical realism's contribution lies (Hands 2004, 293-94). Viewed in this light, critical realism's humble ambition to provide guidance towards a more fruitful economics seems more than reasonable.

A turn toward ontology cannot, and should not, determine precisely how economists ought to proceed. But, as we have seen, ontological reflection of the type offered by critical realism can help economists more accurately understand real-world economies, and under the present circumstances, that would be an important accomplishment.

NOTES

1. Considerations of space prevent me from addressing in detail Steele's criticisms of the critical-realist account of the ontology of the natural world and of the natural sciences. My response will concentrate on those aspects of Steele's critique that raise issues that are most likely to interest the readers of this journal, namely those that pertain to social ontology and the methodology of social science.
2. See also Lawson 1997, xii-xiii, 16, and 40; Lawson 2003, xv-xx and 16-17.
3. The notion of a demi-regularity will be discussed in greater detail below.

4. Steele uses the example of motor-vehicle insurance as part of an (attempted) argument to the effect that retroduction—a mode of inference that, according to critical realism, plays an important part in scientists' efforts to learn about underlying structures—is less important than critical realists suggest. Steele challenges critical realists "to demonstrate how the insurance industry might benefit from replacing their proven (i.e. competitively profitable) inductive techniques with methods of retroduction." However, as we have seen, far from undermining critical realism's emphasis on the importance of (people's knowledge of) underlying causal mechanisms, and of the retroductive inference that (in the case of science) facilitates that knowledge, Steele's example illustrates its importance; the insurance industry can benefit from a grasp, facilitated by retroduction, of the causal mechanisms that underpin a correlation because that knowledge will help them identify those non-spurious regularities upon which (causally effective) strategies for devising profit-enhancing policies can be based. Moreover, insurers' interest in recent developments in the natural sciences, facilitated by retroduction, lends further support to this view. Perhaps most notably, developments in biochemistry, which have shed new light on the underlying genetic mechanisms that predispose people to certain types of illness, are currently attracting considerable attention from insurers, precisely because the knowledge of such mechanisms provided by scientists' retroductive reasoning promises to enable insurers better to understand which classes of people are most likely to suffer from illnesses, and to set their (profit-generating) premia accordingly.
5. The financial innovations violated what critical realists term the "extrinsic closure condition" for the existence of event regularities (Lawson 1997, 77-78).
6. "Economics Focus: What Goes Around," *The Economist*, 9 June 2007: 94.
7. While there are no hard-and-fast rules governing how underlying causal mechanisms are to be illuminated, one approach that is seemingly important a posteriori sees researchers proceeding on the hypothesis that the ill-understood mechanism in question is analogous to some other, better-known mechanism in a different field of inquiry. While, as Steele correctly notes, critical realists are not alone in drawing attention to importance of metaphor in (social) science, he (2005, 142) is wrong to suggest that the critical-realist account of the role of metaphor in social science is completely lacking in novelty. The other approaches to the philosophy of the sciences in general, and to the methodology of economics in particular, which have highlighted the role of metaphor, have been predominantly idealist or postmodernist in orientation, denying the possibility that (social) science (including economics) can yield knowledge of a world that (at least at the time of investigation) exists independently of the researcher. The contribution of scholars working in the critical-realist tradition was to highlight the role of metaphor as a "non-definitional mode of reference-fixing" that enables people to conceptualize and refer to structures that, prior to the research in question, existed independently of the investigators, and whose essential properties were, at the outset of the research, (largely) unknown (Lewis 1999).

8. For detailed arguments that support this claim, see for example Fleetwood 1996; idem 2001b; C. Lawson 1994; Lawson 2003, 168-244; Lewis 2005; idem 2008; Lewis and Runde 1999; idem 2007; and Martins 2006.
9. The fact that the substantive factors emphasized by various heterodox schools presuppose that the social world is open, dynamic, internally related, etc., makes it unsurprising that heterodox economists are averse to the ODN approach adopted by mainstream economists. The worldview of closure, isolation, and atomism presupposed by the latter excludes the substantive factors that heterodox economists hold to be so important (Lawson 2006, 497-98).
10. For examples of how critical realism can contribute to the study of politics, see Marsh et al. 1999 and Lewis 2002.
11. Indeed, it can be argued that Popper himself ultimately accepted something like the critical-realist view of the world as an open system containing non-empirical structures and mechanisms (Runde 1999).
12. For heterodox economists' views on the potential for critical realism to contribute to their research projects, see the essays collected in Lewis (ed.) 2004.

REFERENCES

Boylan, T., and P. O'Gorman. 1999. "Critical Realism and Economics: A Causal Holist Critique." In Fleetwood, ed. 1999.

Caldwell, Bruce. 2004. *Hayek's Challenge: An Intellectual Biography of F.A. Hayek*. Chicago: The University of Chicago Press.

Cartwright, Nancy. 1979. "Causal Laws and Effective Strategies." *Noûs* 13: 419–37.

Fleetwood, Steve. 1996. "Order without Equilibrium: A Critical Realist Interpretation of Hayek's Notion of Spontaneous Order." *Cambridge Journal of Economics* 20: 729–47.

Fleetwood, Steve, ed., 1999. *Critical Realism in Economics: Development and Debate*. London: Routledge.

Fleetwood, Steve. 2001a. "Causal Laws, Functional Relations and Tendencies." *Review of Political Economy* 13: 201–220.

Fleetwood, Steve. 2001b. "What Kind of Theory is Marx's Labour *Theory* of Value? A Critical Realist Inquiry." *Capital and Class* 73: 41–77.

Fleetwood, Steve. 2006. "Rethinking Labour Markets: A Critical-Realist-Socio-economic Perspective." *Capital and Class* 89: 59–90.

Friedman, Milton. 1999. "Conversation with Milton Friedman." In *Conversations with Leading Economists: Interpreting Modern Macroeconomics*, ed. B. Snowdon and H. Vane, Cheltenham: Edward Elgar.

Goodhart, C.A.E. 1989. "The Conduct of Monetary Policy." *Economic Journal* 99: 293–46.

Graça Moura M. 2004. "A Note on Critical Realism, Scientific Exegesis and Schumpeter." In Lewis, ed. 2004.

Hands, D.W. 2004. "Transforming Methodology? Critical Realism and Recent Economic Methodology." In Lewis, ed. 2004.

Hayek, F. A. [1955] 1967. "Degrees of Explanation." In idem, *Studies in Philosophy, Politics and Economics*. London: Routledge & Kegan Paul.

Hayek, F. A. 1976. *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy*. Vol. 1 of *Rules and Order*. London and New York: Routledge.

Ingham, G. 1999. "Money is a Social Relation." In Fleetwood 1999.

Lawson, C. 1994. "The Transformational Model of Social Activity and Economic Analysis: A Reinterpretation of the Work of J. R. Commons." *Review of Political Economy* 6: 186–204.

Lawson, C. 1999. "Towards a Competence Theory of the Region." *Cambridge Journal of Economics* 23: 151–66.

Lawson, C. 2006. "Technology, Technological Determinism, and the Transformational Model of Social Activity." In *Contributions to Social Ontology*, ed. C. Lawson, J. Latsis and N. Martins. London and New York: Routledge.

Lawson, T. 1997. *Economics and Reality*. London and New York: Routledge.

Lawson, T. 1998. "Clarifying and Developing the Economics and Reality Project: Closed and Open Systems, Deductivism, Prediction, and Teaching." *Review of Social Economy* 56: 356–75.

Lawson, T. 1999. "Critical Issues in *Economics as Realist Social Theory*." In Fleetwood, ed. 1999.

Lawson, T. 2003. *Reorienting Economics*. London and New York: Routledge.

Lawson, T. 2004. "What Is an Institution?" Mimeo, Cambridge University.

Lawson, T. 2005. "The (Confused) State of Equilibrium Analysis in Modern Economics: An (Ontological) Explanation." *Journal for Post Keynesian Economics* 27: 423–44.

Lawson, T. 2006. "The Nature of Heterodox Economics." *Cambridge Journal of Economics* 30: 483–507.

Lawson, T. 2007. "Gender and Social Change." In *The Future of Gender*, ed. J. Browne. Cambridge: Cambridge University Press.

Lewis, Paul A. 1999. "Metaphor and Scientific Realism." In Fleetwood, ed. 1999.

Lewis, Paul A. 2002. "Agency, Structure and Causality in Political Science: A Comment." *Politics* 22: 17–23.

Lewis, Paul A. 2004. "Structure and Agency in Economic Analysis: The Case of Austrian Economics and the Material Embeddedness of Socio-Economic Life." In *The Elgar Companion to Economics and Philosophy*, ed. J. B. Davis, A. Marciano and Jochen H. Runde. Cheltenham: Edward Elgar

Lewis, Paul A., ed. 2004. *Transforming Economics: Perspectives on the Critical Realist Project*. London: Routledge.

Lewis, Paul A. 2005. "Boettke, the Austrian School and the Reclamation of Reality in Modern Economics." *Review of Austrian Economics* 18: 83–108.

Lewis, Paul A. 2008. "Solving the 'Lachmann Problem': Orientation, Individualism and the Causal Explanation of Socio-Economic Order." *American Journal of Economics and Sociology* 67: 827–57.

Lewis, Paul A. Forthcoming. "Emergent Properties in the Work of Friedrich Hayek." *Journal of Economic Behavior and Organization*.

Lewis, Paul A. Forthcoming. "Hayek's Economics: From Market Equilibrium to Social Order." In *The Elgar Companion to Hayek*, ed. N. Barry and R. Garrison. Cheltenham: Edward Elgar.

Lewis, Paul A., and Jochen H. Runde. 1999. "A Critical Realist Perspective on Paul Davidson's Methodological Writings on—and Rhetorical Strategy for—Post Keynesian Economics." *Journal of Post Keynesian Economics* 22: 35–56.

Lewis, Paul A., and Jochen H. Runde. 2007. "Subjectivism, Social Structures and the Possibility of Socio-economic Order." *Journal of Economic Behavior and Organization* 62: 167–86.

Martins, N. 2006. "Capabilities as Causal Powers." *Cambridge Journal of Economics* 30: 671–85.

Marsh, D., J. Buller, C. Hay, J. Johnston, P. Kerr, S. McAnulla, and M. Watson. 1999. *Postwar British Politics in Perspective*. Cambridge: Polity Press.

Maynard, G. 1988. *The Economy Under Mrs. Thatcher*. Oxford: Basil Blackwell.

McCloskey, Dierdre N. 1994. *Knowledge and Persuasion in Economics*. Cambridge: Cambridge University Press.

Reed, M. I. 2001. "Organization, Trust and Control: A Realist Analysis." *Organization Studies* 22: 201–28.

Runde, Jochen. 1993. "Paul Davidson and the Austrians: Reply to Davidson." *Critical Review* 7(2-3): 381–97.

Runde, Jochen. 1996. "Abstraction, Idealisation and Economic Theory." In *Markets, Unemployment and Economic Theory: Essays in Honour of Geoff Harcourt*, vol. 2, ed. P. Arestis, G. Palma, and M. Sawyer. London and New York: Routledge.

Runde, Jochen. 1998. "Assessing Causal Economic Explanations." *Oxford Economic Papers* 50: 151–72.

Runde, Jochen. 1999. "On Popper, Probabilities, and Propensities." In S. Fleetwood, ed. 1999.

Ruwanpura, K. N. 2007. "Shifting Theories: Partial Perspectives on the Household." *Cambridge Journal of Economics* 31: 525–38.

Sayer, A. 1992. *Method in Social Science: A Realist Approach*, 2nd ed. London: Routledge.

Shackle, G.L.S. 1972. *Epistemics and Economics: A Critique of Economic Doctrines*. Cambridge: Cambridge University Press.

Steele, G. R. 2004. "Understanding Economic Man: Psychology, Rationality and Values." *American Journal of Economics and Sociology* 63: 1021–55.

Steele, G. R. 2005. "Critical Thoughts about Critical Realism." *Critical Review* 17(1–2): 133–54.

Vaughn, Karen I. 1999. "Hayek's Implicit Economics: Rules and the Problem of Order." *Review of Austrian Economics* 11: 128–44.