ONTOLOGY AND FEMINIST THEORIZING

Tony Lawson

This essay is a response to "The Case for Strategic Realism: A Response to Lawson," by Sandra Harding, which appeared in Feminist Economics, Vol. 5, November 1999, and to "Emancipatory for Whom? A Comment on Critical Realism," by Drucilla Barker; "Once More, With Feeling: Feminist Economics and the Ontological Question," by Julie Nelson; and "Critical Realism, Feminist Epistemology, and the Emancipatory Potential of Science: A Comment on Lawson and Harding," by Fabienne Peter, which appear in this issue of Feminist Economics.

ABSTRACT

In an earlier paper in *Feminist Economics* (Tony Lawson 1999), I suggested that there are likely significant benefits to feminist theorizing from adopting an explicit and sustained concern with ontology. I suggested this in the context of observing that theorizing of an explicitly ontological or realist nature is often downplayed and frequently actively discouraged in feminist writing. Several authors have since commented on my earlier paper, indicating points both of agreement and disagreement. In this essay I respond to some of the more critical comments and attempt to clarify my position in the light of them.

KEYWORDS

Ontology, humanism, strategy, Whitehead, rationalism, science

1. INTRODUCTION

A turn to ontology, the take-up of realist social theorizing, has the potential to be of use to all projects in social theorizing. This was the theme of my earlier paper in *Feminist Economics* (Tony Lawson 1999). There I noted a tendency within feminist argument to play down any role for explicit ontological analysis, to take a distance from forms of realism. I did not (and do not) doubt that certain naive versions of realism are open to severe criticism. But in the earlier paper I argued against universalizing naive versions

as though they covered all realisms. Further, I indicated how certain relatively recent ontological claims (which I defend elsewhere, especially in Lawson 1997) not only evade the sort of criticisms feminists rightly raise against the more naive accounts but also appear capable of facilitating the emancipatory and epistemological projects that many feminists support.

Several comments on, including criticisms of, this earlier paper have since been published in *Feminist Economics*, and I thank the editor, Diana Strassmann, for the invitation to reply. I must also say I very much appreciate the interest shown by the reviewers as well as the constructive nature of their critical reactions. By mostly addressing here some of the criticisms where I am not yet persuaded, I hope I do not mask the fact that I share very much with these reviewers and have benefited significantly from each intervention. I will eventually turn to the specific critical comments of each reviewer below. Before doing so, however, let me provide a brief overview of relevant aspects of the position I am defending.

By ontology I mean the study of the nature of being, a concern with the basic structure of reality. A primary goal of ontological inquiry, as I conceive it, is to provide as complete and encompassing an account of the broad nature and structure of (a relevant domain of) reality as possible. Of course, all knowledge obtained is inevitably partial and fallible, including ontological insight. But a goal of philosophical ontology is to articulate a theory of the nature and structure of reality that is as encompassing as possible of actual configurations experienced. It is in this manner that the ontological conception I defend should be interpreted.

To derive such an ontological conception, the theorist supposes at the outset that the world is intelligible, that what has happened, the actual, must have been possible, and that there are conditions which rendered the actual possible. An ontological framework is achieved precisely through theorizing sets of conditions, in virtue of which certain generalized features of widespread experience were possible. Of course, deriving ontological insights can be a complex task; certainly it is always a fallible one.

Once obtained, an ontological framework can have numerous uses. In my previous *Feminist Economics* article I focused on one I regard as especially helpful at this juncture, which derives from the generality of the framework. Such a framework will likely reveal the particularity of the conceptions of reality presupposed by the many specific methods of science, or policy claims. As a result it can make transparent both the error, and nonnecessity, of universalizing such scientific approaches or policy stances *a priori*. Ontology can identify the errors of treating special cases as though they are universal, including treating abstractions as isolations, i.e., as if they are more concrete than is the case.

In the earlier paper I provided some examples afforded by the specific conception of ontology that I regard as (currently) the most sustainable. This conception (sometimes systematized as critical realism) is derived by

way of identifying the conditions of possibility of various widespread human practices (for details see Lawson 1997).

The resulting conception runs as follows. First, I accept that social reality is the domain of phenomena whose existence depends, at least in part, on us; some examples are artifacts, pollution, and human activity. I find the social domain to be *open* in the sense that reasonably strict event regularities (or correlations) are but a special (and seemingly rare) occurrence. It is also *structured* in the sense of being constituted in part by features that cannot be reduced to human activities and other events. Such features include social rules, relations, positions, powers, social mechanisms, and tendencies. Related to this, I identified the social domain as *emergent* with social structures possessing *emergent powers*. By this I mean that social structures have causal powers that are irreducible to those of human individuals. For example, social structures such as language systems emerge out of human interaction, but have powers of their own that are irreducible to the human speech acts on which they depend. The social realm, in addition, is intrinsically *dynamic or processual*; social structures such as language systems both depend on us and are continually being reproduced or transformed as we draw upon them. In other words, the social world is a process. For social structures, such as households, markets, or universities, existence and change are not two entirely separate aspects; rather change or becoming is intrinsic to their being. The social realm is also highly *internally related* (or holistic). By this I mean that numerous aspects of the social domain are what they are, and can do what they do, by virtue of the (internal) relations in which they stand to other aspects. Teachers and students, employers and employees, and landlords/ladies and tenants spring quickly to mind. The social domain also consists of (internally related) *positions*. Individuals essentially "slot" into a range of different positions, where such positions are found to have rights, obligations, and prerogatives attached to them. Thus, although I may give similar undergraduate lectures each year, and year after year students are obligated to attend my lectures, take notes, submit essays, sit exams, etc., the individuals in the positions of students attending my lectures continually change. It is the positions and their associated obligations or rules that endure. The social realm also comprises *value* and *meaning*, and is *polyvalent* in the sense that absences such as droughts are real, and so on.

Now it happens that the ontological preconditions of various substantive scientific or research stances are easily recognizable as special cases of this general conception, so that any *a priori* universalization of such stances is immediately questionable. A clear example is the insistence of modern mainstream economists that methods of formalistic–deductivist–modeling are appropriate to addressing all economic questions. Formal methods, like all others, presuppose an ontology of some sort. As I argued in my previous *Feminist Economics* article, these modeling methods rest on an ontology of

closed systems – that is, systems in which events are regularly conjoined. It is immediately clear, then, that the ontological preconditions of the methods of mainstream modeling are a very special case indeed of the open, structured, processual, holistic ontology uncovered in critical realism.

Actually, it is possible to say more than this. Most event regularities that occur in the natural realm are restricted to situations of experimental control that occur only because scientists manipulate reality to isolate mechanisms of interest from the effects of potentially countervailing ones. In other words, event regularities are, in part, a production by scientists, resulting from their efforts to identify underlying mechanisms. Given this understanding of the conditions of event regularities, several features of their pursuit in the social realm become apparent. In particular, we can see more clearly why modern economic theories mostly posit accounts of social atoms acting in conditions of isolation; for only such conceptions can mimic the properties of stable mechanisms in well-controlled experimental conditions. Indeed, we can now see more clearly that mainstream economists' requirement of closures in the social realm necessitates a material counterpart precisely of isolated sets of social atoms. By atoms, I refer not to size but to entities, which under given conditions x cannot but produce one predictable outcome y. Isolations are required; otherwise, the effect produced can be modified by additional causal factors not under consideration. And, from the perspective of the open, processual, and highly internally-related social ontology defended in critical realism, we can see that the conceptions formulated by mainstream modelers may actually have very little application in the social realm, and possibly none at all. Moreover, given the *a posteriori* (explanatory and predictive) failures[1] of econometrics and other methods of economic modeling over the last fifty years, we have here an obvious explanation.

Ontological analysis, then, can provide insight. But there are limitations to the sorts of insight it can provide. Ontology can indicate possibilities, or at most the conditions of actualities. It cannot determine which configuration of possibilities will or will not be actualized in any context. I have indicated how, from the perspective of critical realism, it is possible both to criticize the *a priori* universalization of mainstream economic modeling methods as at best a rather risky strategy, and also to explain *a posteriori* the repeated failure experienced by that project. But ontological argument alone does not support the inference that social closures could not (or will never) occur – any more than it can rule out the possibility that a fair coin tossed a hundred times will show a hundred heads. A closed system, like that a controlled experiment sometimes achieves, presupposes an open and structured one, allowing the possibility that human intervention can (or circumstances can sometimes spontaneously contrive to) insulate intrinsically stable mechanisms. But the contexts in which such closed systems are

possible and the specific insights to be achieved are matters to be determined by substantive science or social theory, not by philosophical ontology.

The second example of universalizing to which I drew attention in my previous article for this journal is the portraying of human nature or identity under the aspect only of difference. Human being or nature, I argued, is itself structured, as well as processual, highly internally related, and constituted by relations with nature and society, among other things. And, informed by the ontological perspective, I argued that human beings also share commonalities. Most obviously we all seem to share the capacity to participate in social [as well as natural] being. Further, we each face social structures of determination similar to those faced by (some) others, which influence how we can – and choose to – act; although social structures are never just fixed, they are often found to possess a degree of durability over regions of time and space.

In arguing that commonalities ought not to be discounted, my purpose was to indicate their relevance for emancipatory projects in particular. This example, however, runs up against the same limitations as the preceding one. In referring to the possibility of commonalities, and consequent implications for emancipatory action, I emphasized possibilities. At the level of ontology, it is not feasible to say how such considerations will (or should) be brought to bear in any program of practical action, or even to determine their significance in any specific context of decision-making. This is the task of the more substantive endeavors of policy formulation and, in particular, democratic decision-making, and will always be a highly context-dependent affair.

I run though all of this not least to indicate that there are limits as well as advantages to ontological reasoning. Some reviewers of the earlier essay have tended to pick up on a perceived (over) partiality of my contribution. But in places I think the respondents imply that I should have gone further than ontological analysis is legitimately able. Most respondents, in particular, imply that I might have reflected on issues of strategy. But the determination of strategy is typically not a matter for ontology; it is too contextually specific an affair. Of course, by putting on the cap of a social theorist concerned with concrete issues, including questions of strategy, I could well have gone further while drawing on the insights of critical realism. The results would not then have been specifically critical realist ones (merely those produced by someone informed by critical realism), but certainly such endeavor would have been possible. However, in my earlier article in this journal, I was concerned narrowly with indicating why feminists might take ontology more seriously. Thus I did *confine* myself to considering the potential contribution from this quarter. Hence, while the criticism that I might have gone further is a fair one, I considered it tactically best not to do so in the given context.

On a related issue, I certainly never wished to suggest or imply that a project like critical realism is in competition with the typically more overtly

epistemologically oriented or substantive projects that many feminists pursue. Rather, I view such projects as mutually supportive and capable of reciprocal illumination. I am aware, in particular, that my own project has gained much from the results and manner of feminist theorizing, as I indicated before and acknowledge again below. Here, though, I am primarily concerned with the possible advantages to feminist economics of an ontological turn.

   With this broad outline of the previous paper, and particularly its objectives and orientation, in mind, let me now turn to its reviewers (ordered alphabetically), considering their respective comments and criticisms each in turn.

2. DRUCILLA BARKER'S QUESTIONING OF HUMANISM

Drucilla Barker's worry (one Fabienne Peter also echoes in part – see below) is that by seeking support for emancipatory projects, by looking to facilitate the meeting of human needs, the conditions of flourishing, I am begging the question of whose needs and empowerment, etc., are to be served. Thus Barker (2003: 106) writes of my account:

> Its weakness lies in its reliance on a humanist conception of human agency to provide a center and source of meaning and value, a conception that embodies the Enlightenment narratives of human progress and emancipation. Social emancipation, according to Lawson, requires the existence of shared human objectives – interests, needs and motives – and a recognition of a common human nature, grounded in our biological unity as a species, that acknowledges the rights of all human beings. These are laudable sentiments, but they beg the question: what are the grounds for shared interests, needs and motives?

She concludes (p. 107):

> Dictating the shape of reality is, however, precisely the danger we face from Lawson's ontological prescription to replace structures that are unwanted with those that are wanted, needed, and empowering. Positing the notion of natural unity begs the questions: wanted and needed by whom and empowering for whom?

   Now, I believe there are actually two separate (albeit connected) issues in contention here. The first is whether there are indeed common or shared human needs and interests. The second is whether the goal (which I take to be emancipatory) of replacing unwanted and unneeded structures by those that are needed and empowering inevitably begs the question of whose needs, etc., are to be met. It may appear to be supposed that these two issues amount to the same thing, so that (when I suggest we ought not

to neglect such commonalities as there are in human beings) I am resting my case for emancipation on the existence of differences between us being rendered somehow marginal. This, however, is far from my position; I consider such a scenario not only quite untenable but also (even more certainly) undesirable. I am indeed suggesting that ignoring such commonalities as there are we will likely affect the way we consider the question of emancipatory possibilities. But to emphasize this is in no way to deny the fact of pervasive differences; indeed, to seek commonality is already to recognize differences (and vice versa).

However, the question can fairly be posed, then, as to why (if I accept the fact of pervasive differences between us) I do not also believe that the emancipatory goal I have stressed (of replacing unneeded structures by others that are needed) is, as Barker suggests, inevitably question begging.

Perhaps it is. Behind such a question or worry, I take it, is a presumption that we are all so different that to attend to the needs of some is necessarily and always to disadvantage others. Now this may, or may not, be the case. If it is so, I agree with Barker that any outcome is likely to be a result of power play, so that any emphasis on satisfying human needs is equally likely question begging. Certainly, I appreciate the caution implicit in Barker's position, and accept the danger that arises with any prescriptive stance.

However, I am not yet convinced that our differences are such that in facilitating the needs of some we inevitably harm others. Barker's worry presupposes that human beings necessarily exist in society, i.e., in relations with others, so that, in effect, all actions or doings bear on others. This is surely correct. And I have already agreed that we are all necessarily different in very many ways. But what follows for those concerned with emancipatory issues? I think the only immediate implication is that the question of whether emancipation is possible can and should be formulated in a slightly more specific manner. Given that we are all situated somewhere in human society and are shaped through participating within it, I think it must be accepted that, if we are to pursue an emancipatory project, our concern is inevitably with a form of society. But despite our interrelatedness and differences, indeed as a result of appreciating these features, I believe that, at an abstract level, we can give a formulation of the sort of society that is desirable. Specifically, I suggest our concern must be with the possibility of a society so constituted as to allow that "the flourishing of each is a condition of the flourishing of all and vice versa."

I emphasize that in proposing this formulation of the "good society," I do not presuppose any fixity; the formulation allows for the openness of everything to the future, including human "nature," society, knowledge, technology, science, and all else. But anything short of this formulation, as a goal, it seems to me, is likely to beg the sorts of questions that Barker raises.

An acknowledgment of our differences, then, leads, I suggest, not to an automatic rejection of the possibility of emancipatory projects but to a

questioning of whether a society conceived along the lines formulated above is a real possibility. And if it can be accepted that this is at least a relevant question to pursue, I am suggesting that we are better able to pursue it by being explicit in our ontological assessments. Specifically, I suggested in the earlier paper that, as well as differences, there likely are commonalities in both human beings and in the social structures they face. If this is so, and if we avoid ontology and focus only on the unique historical paths, set of experiences, and personal identities of individuals, we may conclude that the goal of emancipation is question begging somewhat prematurely, i.e., without giving the question full consideration.

I do not, of course, maintain that the good society is inevitable. I merely make the point that we cannot pursue the latter question (or others like it) in anything like an adequate way, if we banish or just neglect explicit ontology. My worry, voiced in the previous paper, is that ontology *is* being neglected in much feminist theorizing, and unnecessarily so, through that project's unwarranted hostility to all explicit forms of realism.

The preceding outline represents my basic response to Barker's worries. But I do want to elaborate on it somewhat. For although I have acknowledged the importance of differences between people, I can well imagine that some critics will yet suppose that I do not take differences sufficiently seriously, and that (in pointing to commonalities at some level) I am inevitably accepting too much fixity or substantiality. Perhaps I am. But let me at least try and be clear about what I do and do not presuppose.

I start by acknowledging that Barker is correct in detecting that I accept a humanist position. However, I must immediately emphasize my humanist commitments are rather minimalist and (of course) do not reduce to anything like the conception of rational economic "man" as formulated throughout modern economics. But, I do believe we humans hold things in common as a species. These features are not ahistorical but are a product of our history. As I have already indicated, I believe, for example, that we possess the need to develop our capacities to partake in both social and natural being. Nor do I see how this need can reasonably be denied. How we become, how our capacities are developed, and the manner in which our needs are continually transformed depends on context and experience, of course. But our capacities to flourish in human society, in particular to develop competence in language and other such features, are quite different from the capacities of nonhuman beings. In this limited or minimalist way I am, as I say, indeed a humanist. But minimalist though this humanism is, the shared aspects that are recognized may prove significant in helping avoid the dangers of which Barker rightly warns.

Now an essential feature of the position I defended in the earlier *Feminist Economics* paper, and have supported elsewhere (Lawson 1997), is that social life turns on human practice (of which communicative activities are a special case). The social world (I argue) does not reduce to human activi-

ties, but it does depend on them. Thus, social structures such as language systems depend on our activities. However, social structures are also a precondition of our activities; we are born into, and develop within, social structures such as language systems, local cultures, etc. Now if social structure depends on transformative human agency, the structural determinists' accounts of social being must be wrong. And, if social structure is a condition of human agency, voluntarist accounts are equally mistaken. We are left, then, with a transformational account: social structure is the (typically unacknowledged) condition of human agency, and through human practices in total, social structure is (typically as an unintended consequence) reproduced and/or transformed. But such claims as hold true here of social structure apply equally to the human subject, including her or his personal and social identity. Both social structure and human individuals are reproduced and transformed through human activity. The conception I defend, then, is one of linked (or co-) development of human individuals and society. Human agency and society are ontologically distinct, and irreducible, though highly connected. They develop in tandem through human social activity. Everything in the social world turns on praxis. And, as I say, it is through human practice that the social structural (including cultural) conditions of human agency, and the human individual too, are reproduced and transformed.

To make clear what is at stake here, let me consider positions that really stand in contrast to this transformational model, but which can be conceptualized as degenerate special cases or polar extreme versions. According to one extreme, a naive version of essentialism, human beings are more or less fixed in their being, either before entering the social process or at an early stage within it. The former of these two possibilities is well captured by the rational (optimizing) agent of modern economics and by much post-Enlightenment thought. Also at this extreme are those accounts that assume the individual is culturally entirely determined by an early age, according to the circumstances of birth and early upbringing. In such cases the human being is treated as generally "fixed" over time. At the other extreme, the human individual, or her or his identity, is, in effect, completely pliable, and continually created anew as the individual changes context including culture. If, at the former naive-essentialist extreme, context barely affects the individual (at least after a certain point early in the individual's life), at the alternative anti-essentialist pole, the individual is almost wholly a product of (changing) context.

I reject both polar conceptions; it is a mistake of much social theorizing to suppose that to reject either one position is necessarily to accept the other. To the contrary, it is possible to allow both that human individuals are continually reshaped over time and that there is always a degree of durability and substantiality in our being. Moreover, I think that such durability through change, or substantiality in process, is undeniably the

case. As I say, we do, by and large, retain our human capacities for capable natural and social being, even if they are being continually developed or transformed. At any point, we have capabilities and conditions of our flourishing, some of which, at some level of abstraction, are common to us all. Once more, especially for those who would reduce everything to texts, I mention the common needs to develop and exercise capacities for accessing texts, for language and communication.

In sum, I do not maintain a naive or overly essentialist conception of human nature. Nor, of course, do I deny the *possibility* that emancipatory projects are doomed. I first make the weaker point that, by denying ontology, theorists cannot adequately put the question of the possibility of human emancipation. To this I add the somewhat stronger claim that a focus only on surface matters (differences) is likely to lead to more pessimistic conclusions than a fuller analysis that also takes into account the deeper (including more shared) aspects of our world. As I say, I merely want here to encourage consideration of an ontological turn in feminist theorizing. Where it would lead can be determined only *a posteriori*.

3. SANDRA HARDING'S STRATEGIC REALISM

Sandra Harding (1999) shares my belief that any blanket rejection of realist analysis by feminists is unnecessarily constraining, and she usefully provides a different perspective on some of my arguments. Her first observation is that, in a context where many natural scientists do hold to a version of naive realism, feminists keen to influence science policy have considered it strategically advantageous to challenge the status quo on epistemological criteria rather than ontological ones:

> Moreover, this naive realism in the natural sciences is . . . continually rearticulated in public discussions of science policy. . . . Feminists frequently are concerned with influencing science policy (to fund the study of and remedies for women's health conditions, environmental degradation, etc.), and feminist philosophy of science and epistemology writings have often provided, and been intended to provide, discursive resources for such policy agendas. . . . In this context it often has seemed more effective to change the topic to epistemic standards: is it fair or scientifically productive to exclude women's issues from what count as legitimate scientific issues, and women's standards for adequate answers from what count as empirically well-supported answers?
>
> (Sandra Harding 1999: 129–30)

Here, then, Harding is giving an explanation in terms of strategy, of "why many feminists have avoided or overtly distanced themselves from

ontological arguments, turning instead to epistemological ones" (*ibid.*: 129). It is true that in my earlier piece I probably implied the view that the feminist avoidance of explicit ontology was due to a mistaken understanding of realism rather than reflecting an informed strategic choice. As such I may well have misled in the way I presented my case, though I doubt that all rejections of realism are purely strategic. But I think the point remains, as Harding indeed explicitly accepts, that to neglect ontology, for whatever reasons (including strategic ones), can yet be debilitating of the feminist project. Of course, the determination of what is and is not strategically advantageous in any discussion is always a highly context-dependent affair, and, as I pointed out at the outset, an ontological perspective like critical realism can have little to say on this anyway. But, political positions that have no grounding other than their perceived strategic advantages are likely to be challenged and called to question sooner or later, so that (and ultimately in part for strategic reasons too) our most sustainable ontological assessments will usually be required at some stage.

Harding does not focus only on strategic issues; she also offers a possible line of defense for scientists who hold "naive realist beliefs about the reality they study" (*ibid.*: 130). Reminding us of the contribution of Thomas Kuhn, Harding suggests that scientists' persistence with favored theories, including ontological ones, can, in the face of anomalies, lead to those theories being refined, strengthened, and clarified. As a result she gives qualified support even to a dogmatic defense of such favored theories:

> I suggest that one could read the accounts that Thomas Kuhn and others have provided as arguing that naive scientific realism, as it is represented in "normal science," is good scientific strategy (Thomas Kuhn 1970). Scientists should vigorously – perhaps even dogmatically – defend their favored theories and against the view of reality that such theories assume against all critics and the alternative realities their criticisms assume or invoke, at least until there is consensus that a better theory is at hand. This resistance to abandoning one's favored theory whenever data fail to support it, and to alternative theories with their different ontological assumptions, has the good effect of pushing one to correct, refine, and strengthen one's own theory, making the reality assumed by the theory all the more "obvious". . . . Kuhn famously argued that to give up one theory for another can be to "switch worlds" – to exchange ontologies. Scientific revolutions are only one of the valuable strategies the sciences have developed to increase the growth of knowledge, he proposed. So the scientists with whom many feminist theorists interact have good reasons themselves to hold naive realist positions.
>
> (Harding 1999: 130)

Of course Harding is here talking of the practices of some natural scientists. She ends the passage just quoted with the following question: "Is not this phenomenon also visible in the social sciences?" (*ibid.*: 130).

Unfortunately in economics I believe it is not. Behind this Kuhnian line of reasoning is the sound advice that something that works well, which is recognized as increasing "the growth of knowledge," should not be jettisoned until we have something even better with which to replace it. But the formalistic–deductivist methods of modern economics never have been successful, even on their own terms (see e.g. Wassily Leontief 1982[2]). It is not just that we are faced with a few anomalies here and there; the whole project always has been thoroughly anomalous in relation to any realistic orientation to the world (e.g., Frank Hahn 1994[3]). And the project is itself riddled with inconsistencies between what its theorists argue ought to be done and what its practitioners actually do (Edward Leamer 1978[4]).

The problem here is that mainstream economists never really contemplate at all that they should revise or clarify their basic approach. And this is because their insistence on formalistic modeling is mostly regarded just as an unquestionable dogma; their explanatory failures and inconsistencies of theory and practice seem barely to impact. Harding is correct to insist that "it requires a great deal more than just 'clear thinking' to dislodge [dominant] ontologies" (*ibid.*: 130). But in modern economics this is not because the (implicit) ontological preconditions of these methods are viewed directly as having the "status as obvious." Rather modern economists seem unaware that their methods have ontological preconditions and take it as obvious only that mathematical–deductivist methods are the way of proper science. Thus, although it will never be sufficient, the project of teasing out the implicit ontology of these methods and confronting this conception with our broader (of course fallible) understanding of social reality is one strategy for actually challenging the common sense of the mainstream economist (or at least of potential recruits to their project).

Finally, Harding notes that my discussion of contrast explanation serves mostly to reinforce the claims of standpoint theorists against its critics. I agree; this is all I would want to suggest. I see ontology underlaboring for methodological and substantive work; it certainly cannot replace either. Having, in my earlier paper, criticized the manner in which modern mainstream economists insist on formalistic–deductivist methods, I needed to demonstrate that there are alternative approaches appropriate to the analysis of an open and processual system; I addressed the usual response that methods which presuppose closure must always be utilized just because there are no alternatives appropriate to open complex systems. Hence I identified contrast explanation as a method appropriate to open systems (it being really but an example of dialectical thinking). In connecting to feminist standpoint theory I had several objectives, but fundamentally I was wanting to indicate and acknowledge that much feminist theorizing is well

advanced along the road already. This is precisely an area where an onto-
logically oriented project like critical realism can be especially enriched by
past and ongoing feminist philosophical achievements.

4. JULIE NELSON AND ALFRED NORTH WHITEHEAD

I feel somewhat churlish in responding at all to Julie Nelson's piece,
because she does so wholeheartedly accept the case for ontology. It is true
that she is not wholly convinced by critical realism and supposes Alfred
North Whitehead's conception offers more. But as my primary concern is
to argue the advantage to feminist theorizing of an ontological turn, and
Nelson accepts this much, I feel it is almost unreasonable to take things
further. This hesitation is compounded by the fact that the sorts of onto-
logical features Nelson emphasizes as desirable – such as process, feeling,
emotion, value, connection – are actually defended in critical realism. My
hesitation is compounded further still in that I happen to think that, at the
level of broad goals and method, critical realism and Whitehead have quite
a lot in common. Certainly, I fully endorse Nelson's suggestion that White-
head deserves serious attention; I find him one of the more intriguing and
stimulating of philosophers. Despite these points of agreement, however, I
still want to say a few words. For Nelson's relative support for Whitehead,
and the terms of this support, suggest that I am not yet articulating some
very central aspects of the realist project I defend sufficiently clearly.

Nelson's central complaint against my own project, in effect, is that it is
too rationalistic, that it overemphasizes reason, abstraction, and formal
logic. Specifically, Nelson's impression of the project is that it "persists – in
an important area – in privileging reason, abstraction, and precision over
emotion, particularity, and what is vaguely known." The reason Nelson
attributes a rationalistic emphasis to the realist position I defend, it seems,
is the latter's apparent brush with dualism in suggesting that the objects of
knowledge can exist independently of their investigation, and its positing
of mechanisms that are (or can be) irreducible to their actualization in
experience:

> Lawson . . . defines his preferred position as asserting "that the ulti-
> mate objects of enquiry exist for the most part independently of, or
> at least prior to, their investigation". . . . Lawson's language of
> "objects" and "independently" seems insufficiently distinguished from
> the usual dualisms of subject and object and gaps between the knower
> and known that are inherent in a substance-and-attributes ontology.
> The "transcendental" realism aspect of critical realist thought seeks to
> assert the existence of objects (mechanisms) outside of experience,
> through (since the gap between knower and known cannot be directly

bridged) arguments for their logical necessity. Abstraction and reason are called on to bridge the assumed chasm. Whitehead's ontology, by contrast, more thoroughly locates the knower *within* reality, and (through a broader, deeper, and more serious understanding of *experience*) sees the knower as having a sense of the whole and the many (or, in more current lingo, the "other"), as well as of the self.

(Nelson 2003: 115)

It is true that I suppose the objects of enquiry can exist independently of (or prior to) their investigation, when by "investigation" I refer, of course, to a human endeavor.[5] In this supposition I resist not only the identification of subject and object (as does Whitehead) but also the anthropomorphic reduction of reality to those features of it that just happen to be investigated (or directly experienced) by human beings. Thus, I do not suppose, for example, that forms of oppression in a given context, or planetary motions, occur only if, or when, they come to be investigated. This is not to deny that the ways in which we understand or perceive "things" or aspects depend in part on us and our local situations. It seems clear, for example, that a non-sighted person in a given context may know aspects of reality in different (better and worse) ways than a sighted person. Our local cultures will affect (enable as well as constrain) how we understand aspects of reality, both natural and social. But this does not mean that the objects of analysis do not, in part at least, exist independently of us. If such a position is conceived as dualistic, I am not sure this renders it necessarily problematic.

Nelson goes on to suggest, more specifically, that my project "seeks to assert the existence of objects (mechanisms) outside of experience, through (since the gap between knower and known cannot be directly bridged) arguments for their logical necessity." This assessment rests on a misunderstanding, and I suspect reveals where I need to be clearer in my argument.

First, I must emphasize that I do not seek "to assert" anything. My aim is to uncover *a posteriori* the nature and structure of reality including of social being, whatever that may turn out to be. This is a fundamental point; any emphasis on processes, totalities, value, and emotion, as well as on mechanisms, is not a matter of preference or desirability or strategy, but an *a posteriori* result. The aim is that account of the structure of reality that proves to be explanatorily the most powerful.

Second, if Nelson's expression "outside of experience" is to be interpreted as meaning "having no contact with, or influence on, those aspects of reality that can be experienced," any assessment that critical realism seeks understanding of a reality that lies "outside of experience" is not correct; there would be no way of detecting such a reality. Rather, in developing an ontological conception, those contributing to critical realism start from *generalized features of experience* and theorize their conditions of possibility. Of

course, these starting points are clearly as fallible as the theorizing that proceeds thereafter. There are no neutral entry points. But fallible experience plays many necessary roles.

Now, third, there is little doubt that the move from generalized features of experience to ontological conception depends on creative imagination and draws on analogy, metaphor, and any other aids to hand, as well as guesswork. No doubt, too, abstraction and reason are involved. But, *pace* Nelson, this move does not include an argument for the "logical necessity" of the conceptions uncovered. Rather, the conceptions achieved are (empirically motivated and so grounded) speculative hypotheses to be compared with any others so derived in terms of their relative explanatory power, etc.

It is, then, in this speculative and empirically controlled fashion that the conception of a structured ontology in critical realism (i.e., a conception that posits underlying structures, powers, mechanisms, and tendencies in addition to the course of actual events) has been derived and is supported. Let me briefly review one of the arguments in case there remain doubts that this is so.

A starting point (one of many) is the generalized feature of experience that, even in the natural realm, interesting event regularities are not ubiquitous but in fact rather (and systematically) restricted in their occurrence, being found to be mostly confined to situations of well-controlled experiments. The theory of reality that, to my knowledge, is best able to make sense of this is the structured ontology already noted. According to this conception, the event regularities achieved in experiments are the result of experimental scientists manipulating reality to insulate stable mechanisms from the effects of countervailing mechanisms; the event regularity is the association of triggering conditions and a mechanism's effects. The confinement of event regularities to experimental conditions, in other words, is explained by the hypothesis that reality is structured and open, allowing experimenters to intervene and close the system (by insulating a single stable mechanism from the effects of others). But the explanation is only a speculative working hypothesis. Given that there are no alternative explanations in contention (that I am aware of) and that the conception in question can make sense of so many aspects of our experience – from speaking and playing to shopping and making cups of tea – there are grounds for our having some confidence in it. But that is all. The point, though, is that the conception sustained is not argued to be logically necessary; rather it is derived by way of creative thought and sustained because it is better able than alternative conceptions to render intelligible various generalized features of experience.

Interestingly enough in the current context, the method I have followed and just described is, at least in very broad terms, similar to that Whitehead defends. In *Process and Reality,* Whitehead is concerned, in particular, with

speculative philosophy, through which he understands the central element to be "the endeavor to frame a . . . system of general ideas in terms of which every element of our experience can be interpreted" (Whitehead 1978 [1929]: 3). He is explicit that in "metaphysics" and "whenever we seek the larger generalities," the relevant method must include "the play of free imagination" (p. 5). He continues:

> The true method of discovery is like the flight of an aeroplane. It starts from the ground of particular observation; it makes a flight in the thin air of imaginative generalization; and it again lands for renewed observation rendered acute by rational interpretation. The reason for the success of this method of imaginative rationalization is that, when the method of difference fails, factors which are constantly present may yet be observed under the influence of imaginative thought. Such thought supplies the differences which the direct observation lacks. It can even play with inconsistency; and can thus throw light on the consistent, and persistent, elements in experience by comparison with what in imagination is inconsistent with them. The negative judgment is the peak of mentality.
>
> (Whitehead 1978 [1929]: 5)

I think it is the case, then, that the method of critical realism is neither anti-empirical, nor overly rationalistic or logicist, and nor is it very different from the approach of Whitehead – which appears to receive the support of Nelson. This is really all I seek to establish here. In reaching these conclusions, I hope the approach I defend is somewhat more transparent. Critical realism aims only to be as rationalistic as the revealed nature of reality appears to warrant.

There are also differences between my own approach and Whitehead's. Perhaps having gone this far in comparing the two projects, I am obligated to give an outline of what I suppose the main contrasts are. For anyone who might be interested in this, I include a very brief sketch in an appendix to this paper. The differences I perceive mostly arise because (I argue) White-head (unlike critical realism) accepts an *a priori* restriction that all aspects of reality conform to the principles of mathematical logic. The result, in fact, is that Whitehead's system is at once both more empiricist and more rationalistic than critical realism. Now it further turns out that, flowing from these differences, are ontological conceptions that are also seemingly divergent. Nelson emphasizes that Whitehead finds a central place for "Feelings! Emotions! Influence! Connection! Holism! Vagueness! Process! Value!" (Nelson 2003: 116). And Nelson may be read as suggesting that aspects like feeling, emotion, and value in particular are insufficiently emphasized, or not regarded as sufficiently central, in this realist project's argumentation. I will have to think about this. Certainly these categories figure fairly centrally in critical realism, too (see, for example, Wesley

Shumar 1999; Andrew Collier 1999, 2000; Margaret Archer 2000; Derek Brereton 2000; Kate Soper 2000; or Tony Lawson 2000). But perhaps Nelson has a point in suggesting that they should be emphasized more. However that may be, the real difference between Whitehead and critical realism concerning these matters, I believe, is more that many of these categories carry somewhat different meanings in the two projects (with, I suggest in the appendix, Whitehead's being the more idiosyncratic).

Still, as I say, identifying differences (and commonalities) between my own project and that of Whitehead is, in and of itself, mostly besides the point here; it is not essential to my basic objective. My main purpose is to suggest that feminist theorists may gain advantages from taking a more explicit, systematic, and sustained approach to ontology, and to illustrate those advantages using the conception sometimes systematized as critical realism. No doubt this latter conception will prove transient in some aspects at least. As with all results of theorizing, it is doubtless partial in many ways as well as fallible, being necessarily produced from a highly context-specific social situation. But for all that I hope I have shown that, as projects in ontology go, the one I defend may not be overly rationalistic.

There remains one aspect of Nelson's commentary upon which I would like briefly to add a comment. This is her interpretation of the mainstream refusal to transform its project as based on fear; Nelson characterizes it as an emotional reaction in the face of open systems in particular.[6] This is an intriguing, and I believe compelling, hypothesis, which I hope will be developed further.[7] Elsewhere, it is true, I have argued it differently; I have suggested that the emphasis on closed-system deductivist modeling is a cultural phenomenon, reflecting the place of mathematics in the history of Western society. But the two assessments need not be in competition, and indeed *prima facie* seem potentially reciprocally enriching. A feature the two hypotheses do immediately share, of course, is being products of a desire to explain a particular emphasis on method in modern economics, an emphasis that ontological analysis suggests to be somewhat out of place.

5. FABIENNE PETER'S QUESTIONING OF SCIENCE

Fabienne Peter (2003) concentrates a good part of her critique on the topic of science. She suggests that "the philosophy of transcendental realism is derived from an analysis of what the world must be like for the particular scientific practice of the natural sciences to be as successful as it is." And from this she infers:

> The approach can thus not challenge the knowledge the natural sciences produce nor its status in society. This stands in sharp contrast

to the extensive literature in feminist philosophy of the natural sciences which questions their alleged "success." Indeed, it has been a longstanding concern of feminist philosophy to rethink the notion of science itself. . . . In the endeavor of rethinking the notion of science, critical realism does not offer much help.

<div align="right">(Peter 2003: 97)</div>

This response captures an aspect of my project and is questionable only in being somewhat partial. However, this partiality does mislead. In critical realism, or anyway in my own contribution to the project, the starting point, as I emphasized at the outset, is *intelligibility*. We all grant intelligibility; anyone reading this article must already have accepted the possibility that it is intelligible. In ontology, the starting point is the intelligibility of widespread features of experience. Given that certain things are experienced the question posed is "in virtue of what are they possible?" What must the world be like that such-and-such is a generalized feature of experience? What are its conditions of possibility? The answer is an assessment of the broad nature of reality or features of it, a theory of (aspects of) ontology.

Peter is correct that one example of this approach is to question "what the world must be like for the particular scientific practice of the natural sciences to be as successful as it is." Of course we can question the terms of this success. But, whether we do or not, such questioning is just a particular example (albeit an important one) of the sort of ontological enquiry I defend; the realist project to which I have contributed has not been restricted to this specific example. Indeed, the possibilities for ontological analysis of this sort appear almost without limit.[8] In particular, the question of intelligibility can be applied not only to nonscientific practices but equally to those practices (scientific or otherwise) found to be unsuccessful in some relevant way. Indeed, in economics it is precisely the continuing failure of the dominant project that I have sought to render intelligible.

Thus, the insights achieved within critical realism, if certainly limited, are somewhat wider than Peter allows. For example, when Peter suggests that I can "not challenge the knowledge the natural sciences produce," she is only partially correct. It is certainly the case that critical realism *per se* has nothing to say about the content or truth status of specific substantive theories, as I have often argued. But it can say something about the form of natural scientific results. Thus, when natural scientists suggest that the objects or laws of their discipline always take the form of event regularities, I argue that they are mistaken; the real objects of natural science are at least as often the underlying powers, structures, mechanisms, and tendencies; the reported event regularities are typically aspects of the way underlying mechanisms, etc., and are manifest under very restricted conditions.

In this way, *pace* Peter, critical realism is precisely concerned with

<div align="center">136</div>

questioning the nature of a branch at least of science. It is suggesting that a fundamental aspect of those natural scientific practices most observers regard as successful is the move from a phenomenon of interest to the identification of an underlying cause. In consequence, *if* the study of nature can ever be said to be scientific there are grounds for supposing that the practice of identifying causes is an essential, if not the fundamental, component. Of course, in so concluding there is no *a priori* presumption that the study of social phenomena must be scientific in the same sense (or, of course, that understanding is not achieved in a multitude of ways). But at the same time it does seem of interest (and it does no necessary harm) to question whether the study of social phenomena can be scientific in the sense of natural science (i.e., to question whether the identification of underlying causes of *social* events is meaningful, possible, useful, and insightful). This is one (but only one) of numerous questions I have earlier pursued.

Peter also raises the question of a more democratic scientific process. She quotes me as arguing that "interested standpoints (including acquired values and prejudices) are not only unavoidable but actually indispensable *aids* to the explanatory process" (Lawson 1999: 40). From this statement she infers that "For Lawson, a variety of different standpoints is valuable not so much intrinsically – as a democratic interpretation of scientific inquiry would stress – as instrumentally, to detect as many potentially revelatory contrasts as possible" (p. 98).

Now my emphasis at the relevant point of the discussion was certainly methodological. But in fact I actually concluded as follows:

> It is thus the case, as other feminists have already argued . . . , that the endeavor to attract diverse voices into the scientific community or any other prominent (or other) discussion can be supported on grounds not just of democracy or fairness but also of good methodological practice.
>
> (Lawson 1999: 41)

In identifying grounds other than democracy or fairness, I never intended to de-emphasize the latter (even if that is the impression I imparted). In any case, let me take this opportunity to stress that I of course support the democratization of the academic process. In principle I welcome the opening up of any conversation. Indeed (although it is not a matter I can deal with here, and it is probably unwise to state things as boldly), I am more or less of the view that, ultimately, democracy, emancipation, and truth are at one.

Peter also focuses on my support for the goal of comparing competing claims according to their relative empirical adequacy, where feasible. Invoking the imagery of scientists peeping at reality through different holes, Peter asks: "But what about the relation among these scientists, the relation scientists have to the 'objects' they study, and the effects this may have on

the process of knowledge production?" (2003: 98). These are fair questions, and it is true that in the paper in question I do not address these matters at any length (although see Lawson 1997: 242[9]). But I think it fair to mention that, at the relevant stage of my earlier *Feminist Economics* paper, I was arguing against any supposition that competing theories need imply a judgmental relativism. It is true that a range of pragmatic criteria and prevailing structures of power, etc., typically bear in determining which theories in any context are sanctioned and even believed (and like Peter I certainly agree with Harding that "it requires a lot more than just 'clear thinking' to dislodge such ontologies from their status as obvious"). But this recognition alone does not undermine the possibility that theories can be compared for their empirical or explanatory adequacy. Explanatory work will no doubt often be difficult, but there is no clear reason to suppose it impossible in principle. I am at every stage determining and emphasizing possibilities, not actualities. I understand that the outcome of any (academic or other) decision-making process will usually be influenced by a multitude of factors. I am merely keen to demonstrate the possibility that "an advance in understanding" can be one of them.

Finally, and like Barker, Peter worries about my commitment to a form of moral realism. Peter concludes, "If avoiding oppression is the goal, accommodating the potential contestedness of needs is more important than issuing universalizing statements" (2003: 99). The latter is itself a universalizing statement, of course. I think universalizing is unavoidable. Our real concern is not with the fact that we sometimes universalize but with how it is done. For my part, I hope I have made clear both my caution toward the practice of universalizing *a priori* and also toward the minimalist universal claims regarding human being that I defend *a posteriori*. My position is not an either/or one; it is more a both/and position. Like Peter I accept the fact and importance of the potential contestation of needs. But I draw attention to the further fact that activities like the contestation of needs themselves have presuppositions in terms of human capabilities and derivatively needs. I encourage a concern for these issues not, as Peter worries, as a substitute for "a more fully democratic notion of scientific inquiry" but as a contribution to understanding (among other things) the latter's conditions of possibility.

Tony Lawson, Faculty of Economics and Politics, Austin Robinson Building,
Sidgwick Avenue, Cambridge CB3 9DD, UK
e-mail: Tony.Lawson@econ.cam.ac.uk

APPENDIX

In this appendix I briefly indicate my own assessment of where, method-ologically (and, it will turn out, thereby ontologically), Whitehead's project and my own part company. In responding to Nelson, I have argued in the main body of the text that, in terms of goals and broad strategy, the two projects are somewhat similar. Yet Nelson is correct to observe that in the end there are significant differences between Whitehead's position and my own, differences that turn, in part, on the role of experience. I do not agree with Nelson that "Whitehead's ontology . . . more thoroughly locates the knower *within* reality" or that Whitehead provides "a broader, deeper, and more serious understanding of *experience.*" But I do agree that Whitehead provides a different account both of the place of the knower within reality as well as of experience. It is my view, however, that in these differences Whitehead is actually somewhat more rationalistic, including logistic and indeed dualistic, than I am. If it is the case that Whitehead is also more empiricist, it is in fact the rationalistic aspect that ultimately is responsible. In a word, my understanding is that Whitehead's project and my own part company not because Whitehead is more firmly rooted in reality, but because his rationalistic (basically mathematical) preconceptions restrict him mostly to a particular component of reality, namely the course of actual events. Let me briefly elaborate.

I have emphasized that, in critical realism, most insights are achieved *a posteriori*; the goal is to discover the way the world is. Now with reality found to be open, structured, processual, holistic, etc., this conception in turn has had a bearing on the range of methods that appear potentially useful to more substantive research in a given context. As already noted, in my earlier *Feminist Economics* paper I argued, in particular, in favor of contrast expla-nation. This is a form of dialectical (as opposed to analytical) reasoning. If the world consists of processes of being as becoming, of tendencies and countervailing tendencies, and so of conflict, transformation, and emerg-ence, where such developments can be both intrinsic as well as extrinsic to a given system, then methods of analytical reasoning will rarely be suf-ficient. In particular, the so-called laws of identity, of non-contradiction and of the excluded middle, may not always hold; dialectical forms of reason-ing will be necessary. This is not a topic I must, or can meaningfully, expand on here. The point I want to make is simply that method also needs to be tailored to ontological insight (the criticism of the universal reliance on formalistic–deductive methods in modern economics is a special appli-cation of this insight). In particular, the degree to which modes of formal–logical reasoning are appropriate is something to be determined *a posteriori.*

Now it seems to me that it is at this point, or on this issue, that my project and Whitehead's part company (and Whitehead actually becomes more

rationalistic). For although Whitehead is prepared to allow creative imagination to bear on the shape of his ontological theory, he everywhere insists that whatever the conception of the basic structure of reality entertained, it must conform to rules of formal or mathematical logic. This, for Whitehead, is an *a priori* restriction, shaping any ontological or metaphysical conception that is allowable.

I have already noted Whitehead's formulation of his goal and method (in comparing it to that of my own). But I abbreviated Whitehead's descriptions slightly. Whitehead rests his speculative philosophy not just on imaginative play but also on "the play of free imagination controlled by the requirements of coherence and logic" (Whitehead 1978 [1929]: 5). His speculative philosophy, we are told, is not just an endeavor to produce a general system of ideas, but "the endeavor to frame a coherent, logical, necessary system of general ideas." As Whitehead expresses matters in his foreword to Willard Quine's *System of Logic*: "The reformation of Logic has an essential reference to Metaphysics. For Logic prescribes the shapes of Metaphysical Thought." Or as he concludes his *Modes of Thought,* "Poetry allies itself to metre, philosophy to mathematical pattern" (Whitehead 1938: 238).

In *Process and Reality* Whitehead expands his idea of speculative philosophy. He emphasizes, in particular, that a "condition for the success of imaginative construction is unflinching pursuit of two rationalistic ideals, coherence and logical perfection" where "the requirement of coherence is the great preservative of rationalistic sanity" (p. 6). In discussing "logical perfection," Whitehead notes that the "history of mathematics exhibits the generalization of special notions observed in particular instances" (p. 6). More definitely, Whitehead insists that philosophy ought to be the "elaboration of categorical schemes" as a complex "matrix from which true propositions applicable to particular circumstances can be derived" (p. 9). He continues:

> The use of such a matrix is to argue from it boldly and with rigid logic. The scheme should therefore be stated with the utmost precision and definiteness to allow of such argumentation. The conclusion of the argument should then be confronted with circumstances to which it should apply.
>
> (Whitehead 1978 [1929]: 9)

Whitehead concludes the section by observing, "Rationalism is an adventure in the clarification of thought" (p. 9).

This outline should serve to support my claim that Whitehead is somewhat more rationalistic in his approach than the realist project I defend, where the latter seeks to gain *a posteriori* insight, and does not insist on conformity with mathematico-logical coherence.

Now if, as Whitehead believes, "logic prescribes the shapes of meta-physical thought," I have yet to discuss the content of Whitehead's metaphysics. Whitehead, as is well known, is concerned to build process and particularity into his scheme. At the same time, his prior commitment to formal logic requires that stasis and universality also be accommodated. Herein, then, lies the basis of (what I take to be) his dualism. He is led to combine a physical or process or experiencing side, a side that is in time, with (as a condition of his rationalism) a conceptual or value or given or eternal side, one that is out of time. Nelson, in emphasizing the categories of feeling, emotions, process, connection, vagueness, etc., in Whitehead's philosophy, is viewing it mostly under one aspect, that of the physical or process component of its metaphysical content, with the overall rational-istic scheme pushed into the background and hardly mentioned. Let me very briefly expand on this claim.

Whitehead's conception is systematized as a theory of organicism. My particular assessment is that this conception is developed to conform broadly with, or to generalize, the abstract structure of physical field theory, drawing especially on the theory of electro-magnetic fields of activity that cover time and space. Hints of this are to be found in *Process and Reality*, but it seems to be explicitly acknowledged in *Science in the Modern World*:

> It is equally possible to arrive at this organic conception of the world if we start from the fundamental notions of modern physics, instead of, as above, from psychology and physiology. In fact by reason of my own studies in mathematics and mathematical physics, I did in fact arrive at my convictions in this way. Mathematical physics presumes in the first place an electromagnetic field of activity pervading space and time. The laws which condition this field are nothing else than the conditions observed by the general activity of the flux of the world, as it individualises itself in the events.
>
> (1967 [1925]: 152–3)

What, then, is this organic conception elaborated to conform broadly to such a mathematical system? The first thing to note is that Whitehead's ontology is actualistic and atomistic. That is, it is composed of actualities that are atomistic in nature. Specifically, Whitehead's "final real things" are "actual entities," atomistic creatures each lasting for a fraction of a second or so (a human being is a "society" or nexus of these actual enti-ties[10]). They each have their moment of becoming and then perish. An "actual entity" or "occasion" is an activity analyzable into modes of func-tioning, which jointly constitute its process of becoming. Each mode is ana-lyzable into separate components, the total experience as active subject and the thing or object with which the special activity is concerned. The latter is: "a datum, that is to say, is describable without reference to its

entertainment in that occasion. An object is anything performing this function of a datum provoking some special activity of the occasion in question" (1933: 226).

An occasion is a subject in respect to its special activity concerning an object; and anything is an object in respect to its provocation of some special activity within a subject. This mode of "special activity" is a prehension. Prehensions are apprehensions or graspings by actual entities or occasions "which may or may not be cognitive" (1967 [1925]: 69). In short,

> . . . every prehension consists of three factors: (a) the "subject" which is prehending, namely, the actual entity in which that prehension is a concrete element; (b) the "datum" which is prehended; (c) the "subjective form" which is *how* the subject prehends that datum (1978 [1929]: 23).

The actuality in becoming is a growing together, or a *concrescence*, of antecedent data into a novel unity.

This is clearly not the place to pursue the details of Whitehead's very elaborate conception. The point I wish to underscore with these few observations is that within Whitehead's metaphysics are basically two sets of aspects. On the one side, there are "subjects," events, process, development; on the other side are (eternal) objects or "potentialities." Without the latter, rational thought is considered by Whitehead to be impossible. The objects are eternal, out of time, but they can ingress themselves in events. The two aspects or sides are not internally but externally related. The side of events captures Whitehead's wish to avoid materialism and mechanism and to develop an ontology of process; the other side, as I say, is required for rationalistic thought.[11] As Whitehead himself puts it:

> Another way of stating this conclusion is that every factor in the Universe has two aspects for our abstractions of thought. The factor can be considered on its temporal side in the World of Change, and on its immortal side in the World of Value. We have already employed this doctrine in respect to the Platonic ideas: – they are temporal characterizations, and immortal types of value.
>
> (Whitehead 1949: 69)

The objects that are prehended, then, are a bit like Platonic forms. They are unchanging, and do not exist in the temporal world, but ingress into, and give form to, temporal events or actualities; they are immortal potentialities of definiteness for any actual existence. As Whitehead expresses it in *Process and Reality*:

> In such a philosophy [of organism] the actualities constituting the process of the world are conceived as exemplifying the ingression (or "participation") of other things which constitute the potentialities of

definiteness for any actual existence. The things that are temporal arise by their participation in things which are eternal.

(Whitehead 1978 [1929]: 39–40)

Whitehead continues:

The two sets are mediated by a thing which combines the actuality of what is temporal with the timelessness of what is potential. This final entity is the divine element in the world, by which the barren inefficient disjunction of abstract potentialities obtains primordially the efficient conjunction of ideal realization. This ideal realization of potentialities in a primordial actual entity constitutes the metaphysical stability whereby the actual process exemplifies general principles of metaphysics, and attains the ends proper to specific types of emergent order. By reason of the actuality of this primordial valuation of pure potentials, each eternal object has a definite, effective relevance to each concrescent process.

(Whitehead 1978 [1929]: 40)

The problem Whitehead is addressing in this last passage is that because his scheme is, in a certain sense, dualistic, because the two sides, eternal objects and the events, are not internally related, something is required to make them conform one to the other as it were, i.e., to make the temporal sequence of events actually conform to a scheme of pre-established harmony. Whitehead wants a system that is consistent on its own terms. He effects this consistency by bringing the assumption of pre-established harmony into the system by way of the category of God. God is the "final entity" or "divine element" referred to in the preceding passage. The details of how God brings the two sides together need not concern us here; the point is that Whitehead's system is intrinsically dualist, a situation in which God is introduced in order to limit the opposition. God, too, is conceived as dual in the same way; God is an actuality that has both "a primordial nature and a consequent nature" (Whitehead 1978 [1929]: 345). The primordial nature of God is as mental and static, as transcendental. The consequent nature of God is as physical and dynamic, as immanent. It is the primordial aspect that is "the pre-established harmony" (Whitehead 1978 [1929]: 255), the feature by which Whitehead seeks to resolve the dualism between eternal objects and process.

Of course, this discussion is overly partial and can hardly do justice to Whitehead's contribution. But it does suggest there are grounds to suppose that Whitehead is actually far more rationalistic, including dualistic, than critical realism, at least in some important respects.[12]

Parenthetically, I might note at this point that the categories of feeling, emotion, connectedness, etc., which Nelson (correctly) finds important for a feminist ontology, apply in Whitehead first and foremost to these

atomistic entities or occasions; they do not have denotations identical to those in everyday use. Consider the category of feeling. Basically, it is an alternative term for a positive prehension, for the way the eternal objects are appropriated into the temporal world. As Whitehead puts it: "This word 'feeling' is a mere technical term; but it has been chosen to suggest that functioning through which the concrescent actuality appropriates the datum so as to make it its own" (Whitehead 1978 [1929]: 164).

Similarly, in Whitehead's scheme of things, the categories of emotions and evaluations are merely subjective forms by which a subject prehends its object. Whitehead does not, then, insist that these categories have the same meaning they possess in wider human experience; rather, the meanings applied in human experience are at best restricted special cases. And the emphasis on connectedness is something that warrants even more caution.[13]

I should emphasize that I am not especially concerned here to argue that Whitehead's conception is wrong or even lacking; my objective is necessarily far more limited. My primary concern is with contrasting his project with critical realism. The central difference, in my view, is that unlike in the case of the latter, Whitehead's system is predetermined to be a kind of actualism. The result is that, as with other actualisms, his approach tends to be at once both rationalistic as well as somewhat empiricist.

The rationalistic aspect of Whitehead, which conditions the rest of his metaphysics, has been noted before, of course, notably by John Dewey,[14] who also goes on to suggest that the emphasis on feeling and emotion in Whitehead is misleading.[15] But in most commentaries on Whitehead the rationalistic side tends to be pushed into the background, and in many commentaries, categories of emotion are taken at face value.

In summary, the two projects here compared do part company. To repeat, a fundamental contrast is that Whitehead's approach is in the end actually more rationalistic than critical realism, and seemingly overly so. Central to this contrast is the fact that in critical realist argumentation the world is "found" to be open and is not constrained *a priori* to accord to laws of mathematics or logic. Whitehead approaches ontology differently. For him, "Faith in reason is the trust that the ultimate nature of things lie together in a harmony that excludes mere arbitrariness," where to experience this faith (as Whitehead does) is "to know that . . . the harmony of logic lies upon the universe as an iron necessity" (1967 [1925]: 18).

NOTES

[1] See, for example, Edward Leamer (1983), Terence Hutchison (1994), and Ariel Rubinstein (1995). Although econometric failure is manifest at many levels, an outwardly familiar sign is the poor forecasting record of econometric "models" designed to track developments in the economy. For a recent assessment of the

very unsuccessful performance of UK forecasting groups, see for example John Kay (1995: 19). (In fact, in examining the record of thirty-four UK groups, including the most quoted ones, John Kay, then the head of a leading forecasting group, summarized the findings as follows: "Economic forecasters do not speak with discordant voices; [keeping an eye on each other,] they all say more or less the same thing at the same time. And what they say is almost always wrong. The differences between forecasts are trivial relative to the differences between all forecasts and what happens.")

2 As Wassily Leontief, a former Nobel Memorial Prize winner in economic science admits:

> Page after page of professional economic journals are filled with mathematical formulas leading the reader from sets of more or less plausible but entirely arbitrary assumptions to precisely stated but irrelevant theoretical conclusions. . . . Year after year economic theorists continue to produce scores of mathematical models and to explore in great detail their formal properties; and the econometricians fit algebraic functions of all possible shapes to essentially the same sets of data without being able to advance, in any perceptible way, a systematic understanding of the structure and the operations of a real economic system.
>
> (Leontief 1982: 104)

3 As Frank Hahn, a leading "economic theorist," observes:

> there is . . . a lesson which has only gradually been borne in on me which perhaps inclines me a little more favourably to the "anti-mathematics" group.
>   The great virtue of mathematical reasoning in economics is that by its precise account of assumptions it becomes crystal clear that applications to the "real" world could at best be provisional. When a mathematical economist assumes that there is a three good economy lasting two periods, or that agents are infinitely lived (perhaps because they value the utility of their descendants which they know!), everyone can see that we are not dealing with any actual economy. The assumptions are there to enable certain results to emerge and not because they are to be taken descriptively.
>
> (Frank Hahn 1994: 246)

4 Consider the views of Edward Leamer, a respected theoretical and practicing econometrician:

> The opinion that econometric theory is largely irrelevant is held by an embarrassingly large share of the economics profession. The wide gap between econometric theory and econometric practice might be expected to cause professional tension. In fact, a calm equilibrium permeates our journals and our meetings. We comfortably divide ourselves into a celibate priesthood of statistical theorists, on the one hand, and a legion of inveterate sinner-data analysts, on the other. The priests are empowered to draw up lists of sins and are revered for the special talents they display. Sinners are not expected to avoid sins; they need only confess their errors openly.
>
> (Leamer 1978: vi)

5 I point this out only because in Whitehead's conception the entities that encounter or "prehend" objects are atomistic "occasions" (see below).

6 Specifically, Julie Nelson points to a "feminist critique of economic methodology," which springs

from a deep analysis of the social, historical, and psychosexual meanings the traditional image of science holds for its participants. The idea that the universe may be open, in some ways fundamentally unpredictable, and intrinsically purposive – in contrast to being a closed system, ultimately distillable into formulae, controllable, and fundamentally indifferent – is not simply a reasonable alternative ontology that can be carefully weighed for its logical implications and neutrally evaluated for its relative merit. . . . The idea of an open universe feels fundamentally *scary* for those who sense that not only their status as scientists set above the objects they study, but also their safety vis à vis chaos, their "manhood" (whether actual, or, in the case of female scientists, symbolic), and their very own distinct selfhood are threatened unless they can keep the living, novel, relational aspects of nature safely at bay.

Feminists who delve into the historical, social, emotional and psychosexual dynamics that have kept women suppressed and oppressed have found a complex of dualistic, hierarchical belief patterns that manifest themselves not only in the social realm, but also in intellectual (and religious, and artistic) endeavors.

(Nelson 2003: 111)

7 In some ways this connects with my argument in Lawson (1997: 180–6), where I suggest the nature and extensiveness of the routinization of human behavior is explained by a deep-seated psychological need for ontological security, for continuity, stability, and sameness in daily life, the avoidance of radical disruption. John Maynard Keynes, too, noticed this psychological need in analyzing how investors cope with uncertainty. Indeed, Keynes takes the view that the practise of assuming things will continue as they are (that the world is not open) is so deep rooted in our behavior that "it continues to influence our minds even in those cases where we do have good reasons to expect a definite change" (1973: 125); that "the idea of the future being different from the present is so repugnant to our conventional modes of thought and behaviour that we, most of us, offer a great resistance to acting on it in practice" (1973: 125).

8 In the social realm I question what the world must be like given that econometrical modeling exercises keep failing on their own terms; that we all follow routines as much as we do; that we follow different routines according to aspects of our perceived identity; that our practices are other oriented; that social structure depends on transformative human agency, etc. It is a longish story but the conception thereby derived is the open, structured, processual, highly internally related social ontology I have defended.

9 It can also be readily acknowledged that the criteria actually employed within (and outside of) science may not *all* be ontological/evidential, but will often turn on considerations of a pragmatist (persuasiveness, simplicity, standard of rhetoric, vested interests) or coherentist (consistency with existing general beliefs, or with those of some authority) sort. Of course, which pragmatic features are regarded as virtuous will depend significantly upon the prevailing social, historical, cultural, and political context. This is a point feminist economists, for example, have recently emphasized. In the economics academy, as in many walks of life, the criteria of persuasiveness and other pragmatic virtues have clearly been laid down by a body constituting a quite unrepresentative cross-section of the community when considered on the basis of gender, race, class, ethnicity, and so forth. We can thus agree with Diana Strassmann (1994: 156), who writes, "As long as methods of argument, training, and socialization remain differentially compelling to scholars with differently positioned lives, bodies, and

experiences, then demographics matter in theory choice." The sort of research carried out reflects something of the situated natures of the researches. Similarly, the standards of evaluation depend upon the situated natures of the evaluators. In short, not only is knowledge fallible and always potentially transformable, but the claims made and held in science are elaborated on the basis of various criteria, doubtless including many that have little to do with the determination of their ontological grounding.

10 A nexus is the name Alfred North Whitehead gives to any fact of togetherness among actual entities (Whitehead 1978 [1929]: 20). A society is a nexus that shares in some type of social order. A society with a realized nexus that is temporal and continuous is called a person. And a human being is not only a person, but a wider society in which social coordination is a dominant factor in the behaviors of the parts (1933: 264).

11 From a critical realist perspective, as I say, rationalism would not be an *a priori* insistence. Methods of dialectical reasoning (such as contrast explanation) are available to facilitate the analysis of open-ended development. Whitehead's *a priori* rationalism, however, requires something like the positing of eternal objects, out of time.

12 Whitehead's duals are of flux and permanence, of actuality and potentiality, of temporality and immortality, of the physical and the mental, of the many and the one, of change and of value, of process and fixed reality. In truth, that his system is based on duals in this sense is something that Whitehead has little hesitation in acknowledging:

> The Universe is dual because, in the fullest sense, it is both transient and eternal. The Universe is dual because each final actuality is both physical and mental. The Universe is dual because each actuality requires abstract character. The Universe is dual because each occasion unites its formal immediacy with objective otherness. The Universe is *many* because it is wholly and completely to be analysed into many final actualities – or in Cartesian language, into many *res verae*. The Universe is *one*, because of universal immanence. There is thus a dualism in the contrast between the unity and the multiplicity. Throughout the Universe there reigns the union of opposites which is the ground for dualism.
>
> (Whitehead 1933: 245)

13 Nelson talks of greater interconnectedness in Whitehead's account, which, she suggests, views the "knower as having a sense of the whole and the many." But remember that the knower here is an atomic entity prehending some object. Whitehead indeed suggests that each event "has a perfectly definite bond with each item in the universe" (Whitehead 1978 [1929]: 41); "Each actual entity is a throb of experience including the actual world within its scope" (Whitehead 1978 [1929]: 190). But it is precisely a consequence of adopting a framework similar to that of physical field theory that everything must be (algebraically) connected to everything else. In a sense, the field just is the set of formal connections: "All real togetherness is togetherness in the formal constitution of an actuality" (Whitehead 1978 [1929]: 32). Everything affects everything else as if by an invisible hand. If the physics of field theory is reductionist, it does not reduce to elements such as atoms or other fundamental particles but to fields as phenomena of generalized interconnection. But this interconnection is prior and logical; the system appears to be determined *a priori* and Whitehead adds a conception of entities whereby the system works through its abstract laws of connection.

If I am correct in interpreting Whitehead as drawing on physical field theory, the connections to which Nelson draws attention are in effect necessary mathematical features of the system.

This interpretation seems to tie in, too, with Whitehead's earlier conception of logical reason:

> The exercise of logical reason is always concerned with these absolutely general conditions. In the broadest sense, the discovery of mathematics is the discovery that the totality of these general abstract conditions, which are concurrently applicable to the relationships among the entities of any one concrete occasion, are themselves inter-connected in the manner of a pattern with a key to it. The pattern of relationships among general abstract conditions is imposed alike on external reality, and on our abstract representations of it, by the general necessity that every thing must be just its own individual self, with its own individual way of differing from everything else. This is nothing else than the necessity of abstract logic, which is the presupposition involved in the very fact of interrelated existence as disclosed in each immediate occasion of experience.
>
> The key to the patterns means this fact: – that from a select set of those general conditions, exemplified in any one and the same occasion, a pattern involving an infinite variety of other such conditions, also exemplified in the same occasion can be developed by the pure exercise of abstract logic.
>
> <div align="right">(Whitehead 1967 [1925]: 25–6)</div>

[14] John Dewey, of course, would prefer the philosophical process itself to be more clearly reducible to an act of experience. Specifically referring to Whitehead's restatement of his ideas in *Adventures of Ideas*, Dewey points out that particular excerpts "suggest the kind of structure exhibited in pure mathematics" (Dewey 1941: 657). He adds:

> . . . Deficiency of my own intellectual grasp may be the cause of my belief that this entire strain of thought substitutes abstract logical connectedness for the concrete existential *temporal* connectedness upon which I have based my interpretation of Whitehead's system. It is enough, in any case, to make me wonder whether I am on the right track when I make that interpretation.
>
> <div align="right">(Dewey 1941, 658)</div>

Dewey, having earlier noted the temporal side of Whitehead's metaphysics, is here picking up on the logical side. What he does not seem to realize is that for Whitehead they are two (if only externally related) aspects of the same system, albeit with the logic side being prior, i.e., with the philosophy of organism developed to conform to the requirements of mathematical–logical coherence.

[15] Dewey writes:

> It is one thing . . . to see and say that there must be something homologous in the material of physical science and that of feeling, ideas, emotion and enjoyment as they occur in human experience. But for the purpose of discovery of better possibilities and the criticism of what exists all that is needed in the way of homology is correspondence of *functions*. Insistence upon identity of content tends, I believe, to obscuration of what is philosophically important. . . . [It is with] deep regret that a . . . sentence reads: "The notion of physical energy, which is at the base of physics, must then be conceived as an abstraction from the complex energy, *emotional and*

purposeful, inherent in the subjective form of the *final* synthesis in which each occasion completes itself."

(Dewey 1941: 660)

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