A vitalist critique of critical realism

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Abstract

The paper compares Whitehead's Process Philosophy with Critical Realism, arguing that the former offers a more comprehensive philosophical frame for heterodox political economy than the latter on ontological, epistemological and ethico-political grounds. It argues that Critical Realism, in building on post-war Epistemological debates amongst Analytical philosophers, reduces all of the non-philosophical conditions of philosophy-science, art, love, and politics-to that of science, per se. Furthermore, it contends that Critical Realism exposes question of epistemology to a further reduction insofar as questions of truth are interpreted in terms of the "logic of scientific discovery". In contrast, due to its reliance upon the Spinozan metaphysical tradition, Whitehead's non-organic Vitalism can avail itself of both Spinoza's hermeneutic "critique of ideology" and his activist and collective political philosophy.

1   Introduction

Critical Realism (Bhaskar, 1978, 1989) is founded on the fundamental distinction between Realism and Idealism: the former metaphysical position being one that adheres to the notion that reality and real objects should be conceived as existing independent of, or irreducible to mind. As Northover (1999: 36) observes, the realist perspective can don a variety of garbs: in *perceptual realism,* the real exists independent of perception; in *predicative realism,* universals exist independently or as properties of material objects; in *scientific realism,* the objects of scientific enquiry exist and act either absolutely or, at least, relatively independent of such enquiry.

In practice three slightly different positions can be adopted in relation to the theoretical statements or propositions of science: (i) *referential*—theories that factually refer to elements in their extensions; (ii) *representational*—theories that represent real entities by making assertions about their attributes and characteristics; (iii) *veristic*—theories for which linguistic statements about reality convey truth or falsehood by virtue of their correspondence with the referents that they represent. In conjunction, Northover argues that (i), (ii), and (iii) imply *semantic realism.* In *transcendental realism*—a form of semantic realism—the objects of science are viewed as structured and irreducible merely to events and their observable patterns. In this sense, transcendental realism is opposed to *empirical realism*—the theory that reality consists of experience and phenomena that are the direct objects of experience alone. Empirical realism asserts that only spatial and temporal continuity can be observed—there is no knowledge of causal power. Accordingly, empirical realism is often combined with a deductivist approach to science: the idea of necessary connections between events must be

projected onto our experiences of the external world. Hence, there is a necessary symmetry between explanation and prediction and truth is reduced solely to that which can be confirmed.

However, for CR's the Humean criterion of causal laws is regarded as insufficient because its necessity can only be comprehended through models operating at the heart of theory. As such, empirical invariance must be supplemented by an examination of both the plausibility and the coherence of the underlying model. But this then introduces the ontological question of exactly what these models refer to (Pratten, 1993: 405-407).

To all intents and purposes, Critical Realism (CR) and Process Philosophy (PP) are both species of the same realist family. Each philosophy shares an allegiance to both an epistemological monism (for Whitehead, the Spinozian notion of one substance and for CR, a materialist stance) and an ontological pluralism. In epistemic terms, each privileges the process of retroduction over the logical operations of deduction and induction.

Retroduction is a logic of discovery rather than truth. Where deduction proves that something *must* be and induction shows that something *actually* is operative, retroduction is a mode of inference that merely asserts its conclusions conjecturally. Empirical things are explained by postulating (and subsequently demonstrating) the existence of real, generative mechanisms (Marsden, 1998: 299-300). For a realist, retroduction takes the form: (i) a particular phenomenon P_1 is observed; (ii) P_1 would be explained if H were to exist and act in the postulated way; and, (iii) hence, there is reason to think that H exists and acts in this way (Marsden, 1998: 300).

Furthermore, in regard to their ontological commitments both CR and PP hold to the notion of an ordered or structured ontology. For CR, the 'logic of scientific discovery' is grounded in a three-layered ontology that distinguishes between (a) the real, made up of entities and underlying mechanisms, which may well operate tendentially or, perhaps, through contradiction; (b) the actual, made up of events and states of affairs (i.e. what is actualised); and, (c) the empirical, made up of experiences on the part of knowing subjects. As Pratten explains, events "can occur without being experienced, causal mechanisms can counteract one another and there can be real mechanisms in nature which never have effects though they would under certain circumstances" (Pratten, 1993, p. 406).

By setting up certain processes of experimental closure, the experimental scientist can isolate particular aspects of the underlying mechanism, which can then be exposed to comprehensive analysis through the application of techniques of retroduction, induction, and deduction, in this way combining theoretical explication and experimental examination. The knowledge attained in this way, thus requires a 'reversal' of the causal flow, which must now proceed from the most concrete modes of experience, back through processes of actualisation, to the underlying mechanisms. For CR's this process of moving from sense-experience to comprehensive knowledge mechanism is called the logic of scientific discovery.

This process of isolation is called or closure can take three forms: (a) intrinsic: ensuring that under identically specified circumstances, individuals would always respond in the same predictable way; (b) extrinsic: effectively isolating the mechanisms being investigated from the influence of those aspects of the environment not explicitly considered by the analysis; and, (c) organisational: imposing some stipulation on individual behaviour so that the requisite sort of behaviour emerges at the level of the system as a whole (Foss,1994: 40-41; Pratten, 1993: 408, fn. 7; Bhaskar, 1978).

The logic of scientific discovery necessarily advances from the identification of invariances to the classification of the structures or mechanisms that generate them. First, an effect is identified and described. Second, a hypothetical mechanism is postulated which, if it existed, would explain the effect. Models are developed through a social practice of production by drawing upon antecedent knowledge and understanding of the experimental situation. Third, an attempt is made to demonstrate the existence and operation of the proposed mechanism through experimental activity, which either isolates the mechanism or eliminates alternative explanations of the underlying mechanism. Transcendental enquiry is thus predicated on "...an understanding of laws as transfactual generative mechanisms, dynamised causal powers, *tendencies*" (Northover, 1999: 39) that describe what happens when, first, causal powers are activated and, then, dynamised

Critical Realism views social phenomena as conditioned by, dependent upon and only ever manifest in natural phenomena, but causally and ontologically *irreducible* to them. Moreover, social forms and individuals have different properties[1]:

> Society is at once the ever present condition and continually reproduced outcome of human agency: this is the duality of structure. And human agency is both typically work (generically conceived) i.e., normally conscious production, and reproduction of the conditions of production, including society: this is the duality of praxis. (Bhaskar, 1986)

In other words human agency, as the power to effect changes in the world, depends not only on our ability to understand, evaluate and to control our motivations and actions, but also on the existence of society and social relations, which we reproduce and transform, often in unacknowledged and unintentional ways.

Social structures are ontologically distinct from natural ones, first, because they "...exist only by virtue of the activities they govern, enable and constrain...do not exist independently of the agents' conceptions of what they are doing in their activity, ...(and) may be only relatively enduring so that the tendencies they ground may be liable to considerable space-time variance" (Pratten, 1993: 411). Furthermore, and more significantly, social phenomena only ever occur in open systems. At the most fundamental level "...the reality of choice presupposes that the agent could always have acted other than he or she did, and thus events could really have been different" (Pratten, 1993: 411, fn. 2,).

This paper will argue (in section 2) that CR, ends up adopting an impoverished conception of both mechanism *and* processes of actualisation to the extent that it renounces (i) the intellectual strength of Whitehead's conception of an ordered or hierarchical inter-relatedness amongst the elements comprising the potential field itself; and (ii) the interconnectedness established between the actual and the potential. Moreover, in ignoring what is afforded by a Spinozan approach to knowledge, it will argue (in section 3) that CR cuts itself off from the richness afforded by the latter's radically democratic ethics and the Spinozan critique of ideology.

A previous paper (Juniper, 2008) specifically focused on the debate between Julie Nelson (2003) and Tony Lawson (1999; 2003), defending Whitehead against Lawson's arguments that certain criticisms that Nelson (2003) had made about his own research—that CR was dualistic, *a prioristic,* and excessively rational—applied with even more force to PP. Nelson's (2003) paper championed the anti-Humean aspects of PP—specficially, Whitehead's efforts to overcome the bifurcation of nature, and his emphasis on the role of the visceral

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[1] For a post Structuralist critique of this Structure and Agency framework see Juniper (2007b).

mode of perception. This paper, however, breaks new ground by focusing specifically on the issue of how to conceive of 'underlying mechanisms' and 'processes of actualization'. It is motivated by the view that these aspects of CR were underplayed in the Nelson-Lawson debate.

The popularity of CR for progressive thinkers, despite the attenuated nature of its ontological and ethico-political commitments (on this, see below), cannot merely be attributed solely to the simplicity of its methodological constructs. One of the reasons for its appeal must surely reside in the frequent resort to the terminology of 'underlying mechanisms', 'contradictions', and 'tendencies', which resonates with familiar Hegelian-Marxist notions of commodity fetishism and ideology critique[2]. Another reason must reside in CR-based interpretations of the notion of fundamental uncertainty, which are especially attractive to those of a Post Keynesian persuasion.

2   Process philosophy and the notion of interrelatedness

This section of the paper relies heavily on Murray Code's (1985) masterful interrogation of Whitehead's philosophy Mathematics and Natural Sciences. While much of Code's discussion draws on the difficult metaphysical chapters of *Science and the Modern World*, the virtue of his narrative is to situate this ontological reading in a comprehensive philosophical context, which, sadly, cannot be reproduced here in all its breadth.

In his Process Philosophy Whitehead (1978: 32-3) distinguishes between eight categories of existence, namely: a) actual entities or occasions; b) prehensions or concrete facts of relatedness; c) the nexus of relations know as public matters of fact; d) subjective forms, which are private matters of fact; e) eternal objects, which are pure potentials for the specific determination of facts; f) propositions, which are impure potentials for the specific determination of matters of fact, public and private; g) multiplicities, which are pure disjunctions of diverse entities; and, h) contrasts or patterned entities, which are modes of synthesis of entities in one prehension.

Whitehead's *ontological principle*, or principle of efficient and final causation, states that actual entities are the only reasons. Alternatively, "Everything that exists is either an actual entity or is derived by abstraction from an actual entity" (Whitehead, 1978: 27, 73). A prehension is a concrete mode of analysis of the world: to prehend is to have a concrete idea or concept of that thing. However, a prehension is also a process of appropriation of an element of, or derived from, an actual entity, which changes the internal constitution of the prehending subject; that is, it can be a process through which the prehending subject, through a series of appropriations, becomes itself.

Eternal objects are "Platonic" objects that are deemed to operate through immanent causality. The eternal object is what guides the process of integration. In bringing identity into diversities of actual occasions eternal objects furnish permanence, universality and identity. They have existence as only one factor within a concrete setting, accounting for what is potential and possible with respect to that occasion, insofar as they determine the sum total of possibilities realized by latter.

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[2] For historically misplaced arguments that Marx himself was a Critical Realist see Marsden (1993) and Pratten (1993).

While Critical Realism and Process Philosophy fall under the category of realist philosophies of science, the latter departs from the former in placing great emphasis on overcoming the "bifurcation of nature". By this term, Whitehead is referring to the apparent dichotomy between a phenomenology of lived experience and the derivative and formal abstractions of science. Whitehead vigorously opposes this dichotomy on the grounds that actual living organisms are things for which supposedly primary and secondary qualities are "endlessly blurred". In other words, nature has never bifurcated in the way presupposed by modernist philosophy.

For Whitehead, therefore, the objects of science are no longer the all-purpose explanation of what is perceived even in the absence of perception, they are no longer placed behind or beyond the feelings of poetry or lived experience, "but are *implicated*, folded into them." The singing bird of the poet and the material bird of the biologist are brought together because the bird endures in existence, is an organism that 'bets on life' just as the inquiring scientist also 'bets on life' (Latour, 2005: 231-2).

The organic philosophy of Whitehead (and that of his contemporary disciple, Gilles Deleuze), is often described as a (non-organic) form of vitalism. Vitalism replaces the Kantian distinction between the *possible* and *real* with that holding between the *potential* or virtual and the *actual*. Kant's concern in *The Critique of Pure Reason*, is with the conditions of possibility of truthful knowledge. In answering this question he attends to the way in which the manifold of sensations made available to us through experience could be combined with the logical categories governing our capacity to make meaningful judgments about the world. For Kant, both the world as it is in itself and the categories structuring our judgments are external to our experience. However, the interweaving of each is accomplished on the basis of the temporal schemata of understanding. For Kant, our inner awareness of time as a continuous succession of instants (or what Kant calls "the synthetical unity of apperception"), operates as the highest principle of understanding in the form of the three temporal "analogies of experience" determining, in turn: the principle of permanence of substance, the principle of the succession of time according to the law of causality, and the principle of co-existence. In contrast,

> The philosophy of organism is the inversion of Kant's philosophy. The Critique of Pure Reason describes the process by which subjective data pass into the appearance of an objective world. The philosophy of organism seeks to describe how objective data pass into subjective satisfaction, and how order in the objective data provides intensity in the subjective satisfaction. For Kant, the world emerges from the subject; for the philosophy of organism, the subject emerges from the world. (Whitehead, 1978: 135)

From this perspective Whitehead's efforts to eliminate the "bifurcation of nature" between 'nature as apprehended', and 'nature as a cause of apprehension' is accomplished through PP or the "philosophy of organism". While an atomistic ontology,

> ... conceives of the essential characteristics of things as those pertaining to the individual and views relations that such entities have with other entities as purely external in nature, an organicist ontology views the essential properties of things as being determined by internal relations they establish with other things.

Although traditional philosophies of science conceive of causal influences flowing from the Subject to Thought, in constructing his concept of 'feeling' (a concept encompassing, but more general than thought alone), Whitehead inverts this relationship arguing that the causal influences, from a process perspective, flow from the datum to the Subject. He draws on the formal term, concrescence, in describing this flow of experience from datum to Subject.

For Whitehead, nature is defined as the terminus of perception and sense-awareness. In *Process and Reality* he (1978: 2-3) speaks in terms of a "warrant of universality", which requires that all of experience exhibits the same texture, provided that we confine ourselves to communicating with immediate matters of fact (Code, 1985: 159-60). Awareness of nature requires of us that we project "sense-objects—such as colours, shades, sounds, smells, touches, bodily feeling—into a spatiotemporal continuum either within or without our bodies." (IS: 114). Knowledge of an event presupposes that the relationships that sense-awareness discerns in the actual event extend beyond the perceptual field. (Code, 1985: 161-2) While 'discerned' events are perceived directly in sense-awareness, 'discernible' entities are known only indirectly through their relationships with discerned events. These relationships are presumed to be both uniform and systematic. Traditional theories of relatedness, which conceive of it in terms of a two-termed relationship between substance and attribute, or universal and particular, fail due to their neglect of a third term—the percipient event—which obliges us to conceive of the perceiver as a full participant in the process of apprehension (Code, 1985: 160-1). Once again, the notion of uniformity grounds our knowledge of percipient events.

Whitehead's early distinction between 'objects' and 'events' is subsequently reconceived in terms of the distinction between 'eternal objects' and 'actual occasions': the former responsible for those "non-transient factors of necessity" previously described by the concept of uniformity. Where events are "the things that come and go in the flux of nature", objects are "the entities which allow for the possibility of knowledge of the flux." (CN: 189) For Whitehead, the inadequacy of the more conventional distinction between 'universals' and 'particulars' resides in the fact that, "every so-called 'universal' is particular in the sense of being just what it is, diverse from everything else; and every so-called 'particular' is universal in the sense of entering into the constitutions of other actual entities". (Code, 1985: 164; PR: 48) Moreover, knowledge of the universal can only be disclosed in the particulars of the actual events under examination. Accordingly, Code suggests that the adjective 'eternal' should be interpreted as meaning 'non-evolving' or 'beyond novelty' rather than 'temporally limitless'.

It is somewhat ironical that Everett W. Hall (1930) accuses Whitehead of committing the 'bifurcation fallacy' in holding to this dualistic theory of eternal objects and actual occasions. In response to such criticism, Code (1985: 166) emphasises the fact that Whitehead's so-called 'dualisms' are always "complementary and inter-mingled". Eternal objects relate to "structures of activity" that are associated with the "relatively permanent re-enactment of determinant and definite characteristics". Here, the conditional adjective "relatively" places emphasis on Whitehead's notion of creativity conceived as a matrix of self-differentiating activity embodied in individual occasions and grounding process of evolution. Such conceptions are effectively betrayed by a mechanistic materialism for which evolution is "accounted for in terms of undirected, valueless or random changes in pre-existing value-neutral structures of activity" (Code, 1985: 167). In Whitehead's process philosophy, every actual entity is an individual unit of value directed at some end: its definite character. Even the bare transmission of purely physical characteristics requires some degree of creativity.

Whitehead's distinction between the physical and the mental poles of concrescence also requires that a distinction be made between those eternal objects belonging to subjective species and those belonging to objective species. In summary, eternal objects not only account for forms of definiteness, permanence, and universality, but also operate as norms for the achievement of value and actuality (Code, 1985: 167; Whitehead, 1967: : 162) . In each of these roles they could never be comprehended as mere abstractions (or linguistic

constructions for that matter) derived from becoming. For Whitehead, God is the ground of all ordering, the ultimate Principle of Limitation. However, in performing this role God embodies the empirical principle: He is the terminus of every attempt to "give a rational account of the world" (Code, 1985: 167; Whitehead, 1967: 78).

The recognition of order, in the sense described above (in regard to evolving inter-related structures of activity) "entails the existence of a Principle of Concretion to account for the existence of individual instances of order". Once again, Code (1985: 168) relates the possibility of an ordered world to the existence of a realm of eternal objects operating as non-contingent forms of definiteness. In the end, Code (1985: 168) appeals to Occam's razor in justifying Whitehead's distinction between the evolving world of actuality and the non-evolving realm of eternal objects. Moreover, he also attributes Whitehead's use of the term 'realm' to the latter's desire to emphasize the inter-connectedness of the totality of eternal objects. This interconnectedness pertains both to actual entities and to other eternal objects. When a "certain possibility is implicated in the actualisation of an event" this is to assert more than the fact that a certain quality is predicated of the event; over an above this, it indicates that the event is distinguishable in its relationships from other events (Code, 1985: 169).

> Put another way, the systematic mutual relatedness of actual entities, which is accounted for by the general principle of relativity, must be reflected in a systematic mutual relatedness of potential entities. (Code, 1985: 170)

While every eternal object is related to every other eternal in a determinant way through internal relations, this determinateness is complemented by relationships of indeterminateness in regard to the eternal object's external involvement with (or in Whitehead's terminology, ingress into) the becoming of actual entities. Ingression thus pertains to the proper connection between eternal objects and actual occasions (Code, 1985: 170; Whitehead, 1967:159). The notion of internal relatedness implies that an actual entity only acquires its definiteness by virtue of its relations with other entities of the same kind, whereas the notion of external relatedness implies that any one eternal object possesses a degree of relevance with respect to a given actual occasion. Here, the term "degree of relevance" conveys the notion that each relationship between eternal objects and actual occasions is constituted through a selective limitation of realization.

It was suggested above that Whitehead, like his critical realist counterparts, places a great deal of emphasis on the process of retroduction: the latter conceived as a speculative search for hypotheses and for new conceptual leaps that is accomplished through a creative application of imaginative reasoning:

> Philosophy is the search for premises. It is not deduction. Such deductions as occur are for the purpose of testing the starting points by the evidence of the conclusions (Whitehead, 1968: 105)

Whitehead alludes to the value of Occam's Razor in "reducing the number of acts of faith required if a large number of premises is to be affirmed" (Code, 1985: 32). Code suggests that much of the impetus for Russell and Whitehead's *Principia Mathematica* can be traced to this retroductive effort to prune the number of acts of faith in the form of necessary ideas and axioms, for:

> The verification of a rationalistic scheme is to be sought in its general success, and not in the particular certainty, or initial clarity, of its first principles (Whitehead, 1978: 8).

Whitehead's stance in regard to the question of form is often referred to as quasi-Platonic. However, the qualifying adjective highlights the fact that, for him, abstract entities should never be "divorced from life and motion".

Because eternal objects can be considered in both a connected and disconnected sense Whitehead introduces a distinction between the 'relational essence' and 'individual essence of an eternal object. The individual essence relates to the eternal object's contribution to the definite and unique quality of the occasion, while the relational essence describes the *how* of interrelatedness in the realm of eternal objects; that is, it describes the eternal object in terms of its abstractness. This abstractness is limited in scope because certain of the definite relations that the object establishes with other eternal objects must include definite alternatives, which carry over to the external relations that the object establishes with actual occasions. Through these divergent notions of interrelatedness, Whitehead accounts for the fact that it is possible to know something without having to know everything. Code (1985, 170; citing Whitehead, 1967:160) summarizes his interpretation of interrelatedness as follows:

> For the notion of internal relations, as Whitehead points out, is the notion that a certain entity acquires its definiteness by possessing a definite set of relationships with other entities of the same kind. On the other hand, any one eternal object, regarded from the standpoint of a given act of realization, possesses a degree of relevance with respect to that particular occasion. There is, in other words, a spectrum of relevance for each eternal object, ranging from total inclusion to total exclusion from the occasion. This means that each eternal object is involved in a 'selective limitation' in the actual course of events. When the eternal object is regarded from the standpoint of this limitation, its external relations are being considered.

Code suggests that the concept of relational essence provides the wherewithal to explain the power of logico-mathematical systems to express complex patterns of entities by means of logico-deductive chains. (Code, 1985: 172; Whitehead, 1967:164) In broad terms, Code (1985: 173) suggests that "logical patterns express the relational essences of eternal objects and the general scheme of relatedness which these entail" while mathematical patterns are more concerned with "the individual essences of complex eternal objects".

Code (1985: 175; Whitehead, 1967: 25-6) cautions that the term 'abstraction' is used in reference to both necessity—the transcendent and permanent aspects of process—and contingency in regard to the nature of the other-worldly objects residing in the realm of possibility. Mathematical 'understanding' pertains to the 'reasonable togetherness' exemplified in actual processes. The distinction between simple and complex eternal objects plays an important role in determining 'routes of penetration' taken by the understanding. While complex eternal objects can be decomposed in terms of a definite finite relationship with a limited, though possibly infinite, set of simple eternal objects, simple eternal objects are not amenable to such decomposition. This classification allows Whitehead (Whitehead, 1967:61-2) to speak of the realm of eternal objects as an ordered or abstractive hierarchy predicated on a layering of relations of relations.

Whitehead introduces a further distinction between 'abstraction from possibility' (as determined by the degree of abstraction pertaining to the given hierarchy) and 'abstraction from actuality' (arrived at by identifying the most general conditions manifest within a particular occasion, which are determined for that hierarchy by the most complex of the pertinent eternal objects). (Code, 1985: 177; Whitehead, 1967:167, 170)

Any abstractive hierarchy is infinite because the Principle of Relativity requires that any complex eternal object be connected to the entire realm of eternal objects, "which

contains an infinite multitude of interconnected possibilities" (Code: 178; Whitehead, 1967: : 169-70). With regard to actual occasions, simple eternal objects at the base of the abstractive hierarchy are more 'abstract' than the complex eternal objects at the apex of the hierarchy in the sense of being more remote from the actual event (Code, 1985: 179).

3   Whitehead's spinozan ethics

Whitehead's resort to a Spinozan ontological framework mirrors a similar move on the part of those members of the Althusserian circle, such as Warren Montag (1989), who turned to Spinoza's *Theological-Political Treatise* and the famous *Appendix* to Book I of the *Ethics*, to inform their Marxist critique of ideology. For Spinoza (1996: IV P61-73), social life and individual life are intricately woven together: man is not born free but becomes so through a constitutive and collective praxis, a 'becoming eternal', driven by the knowledge of *Deus siva Natura* and by love in reason. When guided by reason man is more free, living in accord with common decision, common life and common advantage rather than in isolation (Spinoza, 1996: IV P73; Whitehead, 1978: 11, 135).

In the last chapter of *Process and Reality*, Whitehead describes the threefold nature of his anti-theistic conception of God, whom he conceives in terms of (a) the conative urge towards realization; (b) the formal principle of concrescence; and (c) the ground and expression of accidental creativity. The primordial nature of God is deemed necessary but deficiently actual because He is dependent on actual occasions for developing his consequent determinate nature through a process of self-creation. For Whitehead (1978: 522, 524), God is not a Spinozan substance, yet attributes are assigned to him insofar as he is conscious of the inter-relation between things as a unity. As objects become events, these also exist as God's ideas (1978: 523). Accordingly, despite their transience they enjoy an objective immortality. This conception follows closely on the heels of Spinoza's discussion of the role played by the common notions in the constitution of what he calls the second and third kinds of knowledge.

Knowledge of the first kind (opinion or imagination) obtains when we form universal notions either from singular things represented to us through the senses, albeit, in an unordered or confused way (Spinoza calls this knowledge from random experience), and from signs or ideas of things that we have heard or read about that we recollect (Spinoza 1996: II, P40, S2). Knowledge of the second kind (reason) arises from common notions or adequate ideas of things; while knowledge of the third kind (intuition) proceeds from an adequate idea of the formal essence of certain attributes of Substance to the adequate knowledge of the formal essence of modes or things (Spinoza 1996: II, P38-40). Spinoza calls the understanding arising through the third kind of knowledge, knowing under a species of eternity, because it is an understanding which depends on mind, as on a formal cause, insofar as mind—as the idea of the body—is itself eternal (Spinoza 1996: V, P29, P31). Thus, knowledge of the third kind is like Janus, the Roman God of passage, looking one way to Substance and eternal essence and the other way to singular, finite modes. In their materialist reading, however, Althusser and Balibar (1970: 107), conceive of the third kind of knowledge as the "adequate knowledge of a complex object by the adequate knowledge of its complexity".[3]

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[3] Negri (2004) proclaims that the mystical aspects of Spinozan thought are 'cancelled out' within an ascetic and materialist celebration of collective praxis. Nevertheless, eternity is *internal* to this praxis because we know by experience that we are eternal, outside of duration (Spinoza, 1996: V P22-3; P34;

4   Conclusion

This paper has argued that CR suffers from an inadequate articulation of the relationship between entities, mechanisms, actual events or states of affairs, and what is experienced. Instead (in section 2), it has demonstrated that, through the ontological commitments that it makes, the Spinozan approach of PP affords a much more comprehensive and clearly determined characterisation of the interrelationships within the realm of potentiality and between what is virtual and what is actual. From this organic perspective Whitehead's *Process and Reality* goes on to delineate the successive components of experience itself, subsuming within its framework both the formations of a crystal, the actualisations of quantum mechanical processes, and the cognitive acts of a speaking being (Epperson, 2004). Juniper (2007a) draws on the work of Winslow (2005, 1989, 1986) to argue that Whitehead's process-theoretic arguments about the nature of probability afford a more profound and objectivist interpretation of the rationale for Keynes's distinction between short-run and long-run expectations than that offered by CR.

However, in section 3, this paper also argued that the Spinozan ground of Whitehead's philosophy of organism has much more to offer than just the analytical force of its categorical logic. For CR, epistemological questions are confined to what the character of knowledge must be for scientific discovery to progress towards a deeper and deeper understanding of the relationship between the real, actual and experienced. As we have seen, this includes the interrogation of modes of reasoning (deduction, induction, retroduction) and experimental closure and then progress of scientific knowledge. Moreover, ethical considerations are confined to an investigation into the implications for human conduct of the ontological freedoms that are constituted by the reality of social choice, intention and chance encounter: including the possibility that the collective consequences of actions may differ from those that were originally intended by those individuals or groups who were the originators of such actions. In contrast, this paper has argued that, when freed of its mystical residue, Spinoza's conception of the three kinds of knowledge affords a more comprehensive basis for a radically democratic and collective political philosophy[4].

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P38; P31 S). Similarly Sherbourne (1967), argues that theistic conceptions of God are neither necessary nor desirable for those working within the Whiteheadian tradition.
[4] See Sharp (2007) for an overview of work along these lines.

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