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Speculative Realism and Systems Metaphysics

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Abstract

Recent developments in Continental philosophy have included emergence of a school of "speculative realism" which rejects the human-centered orientation that has long dominated Continental thought, but also opposes naïve realism or positivism. Proponents of speculative realism differ on several issues, but most agree on the need for an object-oriented ontology. Several thinkers retain a focus on difference, a well-established theme in Continental thought. This paper looks at speculative realism from the perspective of the metaphysics of systems theory. Many of the tenets of speculative realism have long been features of systems metaphysics and are expressed clearly in a systems framework.

Key words: realism, metaphysics, speculative realism, systems theory, systems metaphysics, object-oriented ontology, difference

Speculative Realism and Systems Metaphysics

A. Introduction: realism vs. human-centeredness

A new school of thought under the name "speculative realism" has recently emerged in Continental philosophy that explicitly rejects its long-dominant anti-realism. This paper looks at some salient ideas of this school from the perspective of systems theory.

Systems theory, a transdisciplinary project within science, is predominantly realist, but includes also constructionist and other non-realist points of view. My own orientation as a systems theorist has been realist, but I've been interested in the possible relevance to systems theory of the thought of Continental philosophers such as Heidegger and Derrida. Speculative realism marks a significant departure from these earlier thinkers, and I'm now reading *The Speculative Turn: Continental Realism and Materialism*, edited by Levi Bryant, Nick Srnicek and Graham Harman, a collection of articles from this community. I'm also reading *Against Continuity*: *Giles Deleuze's Speculative Realism* by Arjen Kleinherenbrink. Some ideas in these books seem in accord with systems metaphysics. Reading the *Speculative Turn* makes it plain that there is diversity of views within speculative realism, so I will take up here only themes addressed by a few contributors to this book and by Kleinherenbrink's interpretation of Deleuze.

Speculative realists appear to be reacting to what they see as the prevailing anti-realist or "human-centered"[1] orientation of Continental philosophy – as opposed to what might be called the "world-centered" orientation that typifies science towards which analytic philosophy is more aligned. The editors of this book describe the Continental tradition as follows: "Humanity remains at the center of these works, and reality appears in philosophy only as the correlate of human thought. In this respect phenomenology, structuralism, post-structuralism, deconstruction, and postmodernism have all been perfect exemplars of the anti-realist trend in Continental philosophy." They contrast this approach with their own, noting that while speculative realists obviously do not all agree on many issues, "…all of them, in one way or another, have begun speculating once more about the nature of reality independently of thought and of humanity more generally." The phrase "human-centered" appears explicitly in some individual essays in this book to characterize the orientation that is rejected.

Another way of expressing the relation between human- and world-centeredness is to say that it maps onto the relation between epistemology and ontology. While one cannot

[1] "Mind-centered" is an alternative to "human-centered." Not all varieties of mind-centeredness are human-centered, but many are, and those that are not (e.g., absolute idealism) might be regarded as projections of a human-centered view. Transcendental idealism – Kant and those he influenced – is plainly human-centered, and is probably the primary target of speculative realism.

completely separate ontology from epistemology, realists privilege ontology and anti-realists privilege epistemology. Some Continental philosophers might claim not to be human-centered and to be doing ontology, or at least that their philosophy is neutral with respect to these distinctiona. For example, Heidegger's Dasein is human-centered but Heidegger claimed to have later moved away from human-centeredness. One might regard his notion of "Being" as a neutral conception that transcends the dualism of human- vs. world-centeredness. The *Speculative Turn* often characterizes the dominant position of Continental philosophy as oriented towards the "correlation" of subject and object. But Heidegger didn't move far from human-centeredness, and in "correlationism" human-centeredness is clearly dominant. The focus in this correlation is on human *access* to being, i.e., on epistemology. This is plain in Kant's view that the thing-in-itself is inaccessible, that all we have access to is the thing-for-us.

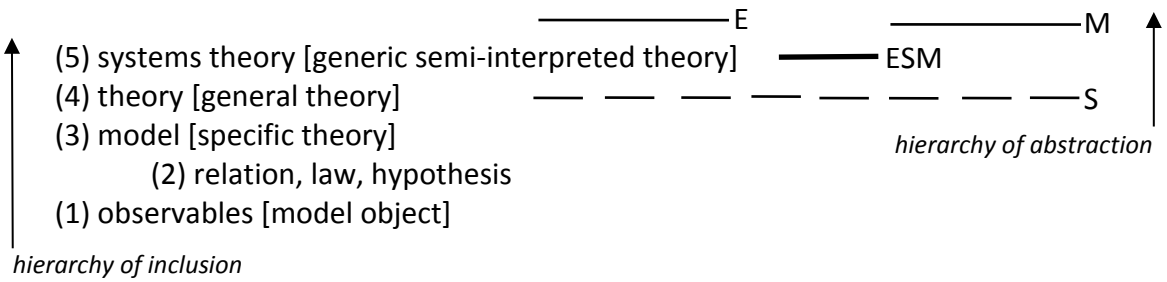
The title of the *Speculative Turn* book raises the question of the relation of realism to materialism. Speculative realists differ on this. Graham Harman advocates "realism without materialism." Other speculative realists, influenced by Marxism, regard realism and materialism as synonymous.

B. Systems theory and the ontology-epistemology dichotomy

As a project within science, systems theory is aligned with world-centered realism, but there is still a diversity of views about this within the systems community. My own view agrees with that of Mario Bunge (1973), who characterized the systems project as an attempt to construct an "exact and scientific metaphysics" (ESM), where "metaphysics" means a system of general ideas applicable to many diverse phenomena, "exact" means expressed mathematically – at least as an ultimate goal, and "scientific" means drawing upon and contributing to theories in the sciences. This aim is realist but not positivist since it affirms a useful connection between science and metaphysics.

Bunge explains the systems project with the epistemological hierarchy that is summarized in Table 1 as a five-level hierarchy of inclusion on the left that is fused with a three-level hierarchy of abstraction on the right.

Table 1 Epistemological hierarchy
Bunge's terms are in brackets; he does not include (2), which is why it is indented.



Level (5), i.e., systems theory, is ESM. Above level (5), at the highest level of abstraction, E refers to mathematics, which confers exactness on ESM; M refers to philosophy, specifically metaphysics, which confers meaning and generality on ESM. Level (4) is aligned with S, whose multiple lines represent multiple theories in the sciences. This conveys the idea that systems theory draws upon and contributes to multiple scientific theories. ESM should actually also be shown as multiple lines, since systems theory in the singular does not exist, but systems theories in the plural abound; for example, network theory, information theory, automata theory, nonlinear dynamics, feedback control theory, game theory, etc. Calling something a "systems theory" doesn't imply that the theory was developed by systems theorists, but rather that it has transdisciplinary usefulness. For example, thermodynamics, a theory in physics, is fundamental to systems ontology, so is here called a "systems theory."

A model at level (3) is a linked set of relations at level (2) that apply a (general) theory at level (4) to an empirical domain at level (1). For example, a model of the solar system is the application of the theory of Newtonian mechanics to relations between the observable motions of the planets and their satellites. Kepler discovered some of these relations empirically but they were only comprehensible when derivable from Newton's theory. Epistemologically, a "system" is a model, but ontologically, a "system" is the reality referred to by the model. There is an actual solar system independent of human thought. Models of the solar system represent this actual system only approximately. For example, a Newtonian model of the solar system ignores electromagnetism; a more accurate model would include it.

C. Core tenets of speculative realism

Let me summarize some tenets held by many, probably most, speculative realists.

1. **Object**. Many speculative realists advocate an "object oriented ontology" (OOO), where objects are entities, things, beings. Deleuze, regarded by Kleinherenbrink (2020) as "both a forerunner and a high point of what is called speculative realism, and more specifically of its 'object-oriented' branch," calls them "assemblages" or "machines." This object-centeredness rejects prevailing attitudes in Continental philosophy which in turn were critical of earlier philosophical positions. As Harmon (2010) observes, "… it is fascinating to note that almost every available 'radical' option in philosophy has targeted objects as what most need to be eliminated." But in this philosophical school the pendulum has swung back to objects.

Entities can be joined together to produce new entities. Kleinherenbrink (2020) notes, "As Deleuze argues, each newly forged relation is itself immediately an irreducible machine." The constituents of entities are likewise entities. Kleinherenbrink (2020) notes, "It is important to note that the 'heterogeneous elements' constituting machines are simply more machines."

2. **Difference**. For some speculative realists, difference plays an important role in this object-oriented ontology. For example, difference is central to Deleuze's notion of being; more about this in points 4 and 6 below.

3. **Irreduction**. The irreducibility of entities is asserted in an extreme way by Latour. Bryant et al (2010a) write, "Against all forms of reduction to physical objects, cultural structures, systems of power, texts, discourses, or phenomena in consciousness, Latour argues for an 'irreductionism' in which all entities are equally real (though not equally strong) insofar as they act on other entities. While nonhuman actors such as germs, weather patterns, atoms, and mountains obviously relate to the world around them, the same is true of Harry Potter, the Virgin Mary, democracies, and hallucinations."[2] For many speculative realists, physical entities are not special, so entities are not restricted in type. Speculative materialists may not agree but even for them there is no universal ground for entities.

4. **Relation**. For Deleuze relations are external to objects (Kleinherenbrink 2020). There are multiple grounds for this "externality thesis": (i) Involvement of an entity's qualities in particular relations is not obligatory. (ii) The qualities are separate from the external unity that binds them together. (iii) The external aspect of the entity is supplemented by an internal aspect that has no connection to these relations; this is elaborated upon in point 5. The "relations" that are said here to be "external" are *exterior*. (Speculative realists rarely recognize that entities also have interior relations.) They are "external" also in a second and different sense: they are extrinsic (contingent) and not intrinsic (necessary) to entities and their qualities.

5. **Internal Dimension**. As Bryant et al (2010) write, "…nothing boils down to its relations." Entities are not solely defined in terms of their differences from or their relations with other entities or differences in the qualities that mediate these relations. Rather, entities have an interior dimension distinct from their exterior manifestations. Something internal is "withheld" from all external relations with other entities. This calls to mind Kant's distinction between phenomena and noumena, but Kant's distinction concerns the relation of subject and object and establishes epistemological limits for the subject. For speculative realists, however, the human subject has no special status. Limits apply also to object-object relations but these limits are ontological, not epistemological: no object, interacting with another object, encounters the full reality of the other object. This "withholding" of the interior from external manifestation, i.e., from presence, also calls to mind Heidegger's "concealing," but for Heidegger what is concealed is not an inside sealed off from the outside but the generative openness of presencing itself (Donkel 2021). While one might expect that these "withheld" interior aspects

[2] Other entities that speculative realists have mentioned in their lists include computer programs, zebras, apples, conversations, keys, emotions, meteors.

of entities are still linked in some way with their external qualities, some speculative realists seem to regard such linkage as minimal or absent.

6. **Unity**. Entities have intrinsic unity and thus are discrete. In Deleuze's fourfold ontology of "machines" (and for him every entity is a "machine"), the external aspect of an entity is a twofold, one term of which is unity and the other multiplicity. The internal aspect of an entity is also a twofold, a unity and a multiplicity. The external twofold is "actual" and relational; the interior twofold is "virtual" and non-relational. Deleuze calls the internal unity a "body without organs" and characterizes it as indivisible, nondecomposable, unproductive, and ineffable (Kleinherenbrink 89).[3] The external unity carries the multiplicity of qualities; the internal unity separates this entity from other entities and assures it individuality.

D. Systems theory

Many core ideas of speculative realism have long been recognized in systems ontology. What follows are systems equivalents of core ideas of speculative realism, noting also some differences between systems metaphysics and speculative realism.

1. **System**. *An object is a system*. Systems ontology centers in the notion of "system," which means entity or object but can also mean process. The most common definition of "system" is a set of elements and a set of relations that organize the elements (Hall and Fagen 1956). (Below, "attributes" will be added to "elements" and "relations" to expand the definition of "system.") Every system is a Janus-faced duality: it is simultaneously a relation and an element. As a relation, it organizes the system's internal elements which are also systems (sub-systems) and element-relation dyads. As an element, it can be part of an external supra-system, which is also an element-relation dyad. Systemhood is mereological and is recursive or fractal.

2. **Distinction**. *Difference, systems theoretically, is called distinction.* The notion of "system" encompasses two core ideas. One idea is distinction, exemplified in a fundamental way in the basic distinction between system and environment. Distinction has the same meaning here as difference, so difference is also fundamental to systems ontology. (The word "distinction" should not be interpreted as implying a human-centered perspective.) In thermodynamic ideas about system, difference means disequilibrium. The basis of the being of any systems inheres in its disequilibrium with, i.e., its difference from, its environment. Disequilibrium is equally the basis for becoming since it generates a drive towards equilibrium, which if not blocked yields a process. The distinction between system and environment is external; distinction also applies internally in that elements are distinct one from another, as are relations; see also point 5.

[3] It is ironic that the "body without organs" essentially returns us to the inaccessibility of the noumenal, ironic because it is precisely Kant's human-centeredness that speculative realism rejects.

3. **Holism**. *Irreduction is holism.* Systems theory is anti-reductionist. A system is a whole, a "partial whole" (Murdoch 1992) to be exact, which is different than the "sum" of its parts. Wholes can be anything, so this implies an "ontological parity" (Ross 1980) -- I call it "ontological egalitarianism" – which rejects reductionism. While all systems are equally real, one can still distinguish different types. Miller (1978), for example, divides systems into those that are concrete, abstracted, and conceptual. Concrete systems are physical, and define the domain of the natural sciences. Since the systems project is rooted in the sciences, much of systems theory concerns concrete systems, and thermodynamics is fundamental for such systems. Abstracted systems are physically instantiated but their physical aspects are not of interest; they primarily define the domain of the social sciences. Network theory and game theory are systems theories that apply to this domain, and networks and agents need not be instantiated in any specific material way; in Bunge's nomenclature (1973) they are "stuff free." The categories of information and utility are important for abstracted systems; neither have physical units, in contrast with matter and energy which have physical units and are fundamental to concrete systems. (Information is also applicable to concrete systems.) Conceptual systems are not materially instantiated and include for example mathematics and toothfairies. Since only some systems are material, and even material systems have immaterial aspects, systems theory is realist but not materialist.

4. **Function**. *Relations of the system with external entities define function.* The systems view partially supports the externality thesis. The second core idea of the notion of "system" is order. The system participates in the exterior order of its environment. A system is an element that carries (binds) its qualities, commonly referred to as attributes, through which it enters into relations with other entities in its environment. Collectively, these relations are often referred to as the system's "function"; no connotation of purpose is intended by this word. But relations also specify attributes. Attributes carried by the system and by possible external relations need not coincide. (A round peg may not fit into a square hole.) This is a major theme in Gestalt psychology, a field that has contributed to systems theory.

5. **Structure**. *Internal dimension is structure.* Order applies internally, and in fact interior order is the basis of the definition of "system" given above: a set of elements and a set of internal relations that organize the elements. These internal relations define the system's "structure." A system is ordered as opposed to disordered. This interior order is thermodynamically expressed by saying that systems normally have lower entropy than their environments. Usually structure is viewed as constitutive, as what a system *is* while function is what a system *does*, but function can be viewed as constitutive as well. Structure is no less relational than function, which follows from the fractal/recursive character of systems; this would seem to differ from the non-relationality that Deleuze posits for the inner character of entities.

6. Unity. The unity of a system inheres in the fact that a set of relations can be integrated into a single relation, which by the Janus principle is equivalent to a single element. Facing inwards, a system is a unitary relation that organizes its constituent elements. Facing outwards, a system is a unitary element that participates in the exterior order of the environment through relations with other systems. These unities resemble the outer and inner unities in Deleuze's fourfold.

The matter is more complex than this, since the system does not interact with its environment only via its outer qualities. Rather, elements within the system can also be involved, via their attributes, in relations with external elements. Systems theory denies the hermetically sealed inner reality which seems to be posited by Deleuze. While structure is usually partially concealed in function, nothing is absolutely and permanently immune to environmental access. Kleinherenbrink (2020) writes, "Bryant holds that no entity ever directly encounters the interior of another being." From a systems perspective this is an exaggeration. It's often or mostly true but not always true. X-rays encounter the inner structure of bodies.

The internal unity of a system can be expressed mathematically. If the single relation representing the entire system cannot be fully decomposed without loss, then the system has at least some non-decomposable unity. Some aspect of the system involves a relation of all of its parts, and this aspect might metaphorically be spoken of as a "body without organs." But if internal unity is defined in this way, Deleuze's characterization of this unity as unproductive ignores the fact that it is from this internal unity that the external qualities of the system emerge. And there is nothing ineffable about a non-decomposable relation; one can define such a property mathematically. This said, most systems are in fact partially decomposable (Simon 1981), so decomposition does not eliminate all order in the system.

E. Summary

Many tenets of speculative realism have long been asserted by systems theory. The school of speculative realism would gain significantly from familiarity with the systems literature.[4] The philosophical work of Mario Bunge is a good starting point. This is not to say that systems metaphysics agrees with everything asserted by all speculative realists. It does not, but the focus of this paper has been mainly to point to areas of agreement. This is also not to say that systems theory has nothing to gain by familiarity with the literature of speculative realism. Finally, commonalities between systems metaphysics and speculative realism illustrates clearly that the systems project is engaged in constructing a ontology that connects not only to mathematics and scientific theories but also to metaphysics, most recently to this new Continental school.

[4] One paper in the Bryant et al book (2010), that of DeLanda, reflects extensive familiarity with the systems literature and explicitly addresses some systems themes, especially emergence. It bears primarily on Deleuze's notion of the "virtual," and does not directly address issues discussed in this paper.

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