Theory and History of Ontology (www.ontology.co)      by Raul Corazzon | e-mail: rc@ontology.co

## Brian Cantwell Smith *On the Origins of Objects*

## Contents

This part of the section Ontologists of 19th and 20th centuries includes of the following pages:

Brian Cantwell Smith *On the Origins of Objects* (Current page)

## Introduction

From the back-cover: "*On the Origin of Objects* is the culmination of Brian Cantwell Smith's decade-long investigation into the philosophical and metaphysical foundations of computation, artificial intelligence, and cognitive science. Based on a sustained critique of the formal tradition that underlies the reigning views, he presents an argument for an embedded, participatory, 'irreductionist,' metaphysical alternative. Smith seeks nothing less than to revise our understanding not only of the machines we build but also of the world with which they interact.

Smith's ambitious project begins as a search for a comprehensive theory of computation, able to do empirical justice to practice and conceptual justice to the computational theory of mind. A rigorous commitment to these two criteria ultimately leads him to recommend a radical overhaul of our traditional conception of metaphysics.
Along the way, Smith offers many fascinating ideas: the distinction between particularity and individuality, the methodological notion of an "inscription error," an argument that there are no individuals within physics, various deconstructions of the type-instance distinction, an analysis of formality as overly disconnected ("discreteness run amok"), a conception of the boundaries of objects as properties of unruly interactions between objects and subjects, an argument for the theoretical centrality of reference preservation, and a theatrical, acrobatic metaphor for the contortions involved in the preservation of reference and resultant stabilization of objects. Sidebars and diagrams throughout the book help clarify and guide Smith's highly original and compelling argument.".

From the Preface: "This is a book about metaphysics-one that attempts to do justice to the tundra, to gardening, to politics, to rock. As indicated, my path into these subjects has come through computer science, but that is mostly by the way. Although some technical material is reviewed in chapter i, computational considerations are largely set aside, in order to tell a tale about the territory into which that long exploration has led. The result is something of a metaphysical romp-occasionally riding rough-shod over turf already well explored (and well tilled) by generations of writers: from philosophy, feminism, theology, science studies, physics, poetry. Notwithstanding the germ of truth in the remark that "progress is made by stepping on the toes of giants," links with these literatures

need to, and at some later point will, be forged. Nevertheless, my aim for the present text is simple: by presenting the story stripped of its computational heritage, to open up a conversation about perspectives, requirements, insights, and struggles-a conversation with others who have been led, via different routes, to this same metaphysical terrain.

To those inspired to take the trip-whether from explicit professional wrestling with such issues, or as the result of late night reservations about how to participate authentically in academic life-I hope to say two things. First: yes, it is possible to base uncompromising theoretical inquiry on alternative foundations: messier foundations, contested foundations, foundations that run closer to the wry and weathered texture of ordinary life. No one, least of all God, has decreed that intellectual rigor must (or even can) be founded on a pristine foundational atomism. Second, though, I also want to make evident just how much such a transformation costs. Politics, creativity, ambiguity, irreverence-none of these can be grafted, at a later stage, onto a silent steel core, or even poured, like life-giving water, over inherently desiccated foundations. The whole story has to be turned upside down." p. IX-X.

From the Conclusion: "To say that this book has opened more doors than it has closed is not to say much, since anyway it is an argument against closed doors. Still, an attempt has been made to tell a coherent story, a story it will pay to review. For one thing, it is important to see how many of the desiderata laid down in the first few chapters have been met. Since I have barely scratched the surface of a positive proposal, it is also important to understand what work remains to be done. And a number of other loose ends need to be attended to, to bring even this much of an introduction to a close.

Overall, the project was to develop what I called a *successor metaphysics*, one that would honor the following pretheoretic requirements:
1. Do justice to what is right about:

> a. *Constructivism*: a form of humility, or so at least I characterized it, requiring that we
> acknowledge our presence in, and influence on, the world around us; and

b. *Realism:* the view that adds to constructivism's claim that "we are here" an equally profound recognition that we are not all that is here, and that as a result not all of our stories are equally good.
2. Make sense of *pluralism*: the fact that knowledge is partial, perspectival, and never wholly extricable from its (infinite) embedding historical, cultural, social, material, economic and every other kind of context. The account of pluralism must:
a. Avoid devolving into *nihilism* or other forms of vacuous relativism, and in particular not be purchased at the price of (successors notions of) excellence, standards, virtue, truth, or significance; and
b. Not license radical *incommensurability*, provide an excuse to build walls, or in any other way stand in the way of interchange, communion, and struggle for common ends.
Two additional criteria were applied to how these intuitions are met:
3. Be *irreductionist* -- ideologically, scientifically, and in every other way. No category, from sociality to electron, from political power to brain, from origin myth to rationality to mathematics, including the category "human," may be given a priori pride of place, and thereby be allowed to elude contingency, struggle, and price.
4. Be nevertheless *foundational*, in such a way as to satisfy our undiminished yearning for metaphysical grounding. That is, or so at least I put it, the account must show how and what it is to be grounded *simpliciter* - without being grounded in a, for any category a.
Along the way, the account should:
5. *Reclaim* tenable, lived, work-a-day successor versions of many mainstay notions of the modernist tradition: *object, objective, true, formal, mathematical, logical, physical,* etc." (pp. 345-346)

From: Brian Cantwell Smith, *On the Origin of Objects*, Cambridge: The MIT Press 1996.

**Critical judgments and B. C. Smith' replies**

"Smith's work may be aligned with the situated cognition tradition due to Barwise and Perry (Situations and attitudes, 1983). This approach emphasizes the importance of context in determining meaning. The situated semanticist is inclined to begin her theory of meaning with indexicals and other radically context sensitive representations. Tokens of 'I' have very little meaning independent of how, when, where, and by whom they are used. More generally, the situated approach to cognition places significant emphasis on the contribution of the situation of the organism to that organism's cognitive processes.

Smith argues that as soon as we register the world using a system of representation, we make a set of strong assumptions about the way the world is. His task has been to show the profound consequences of this insight for the study of systems of representation.

Smith makes use of an engaging imaginative strategy to draw attention to the theoretical moves required to explain the occurrence of representation using only the resources of a representation-free physical world. Smith urges us to consider whether we need to think in terms of objects at all. Might an ontology consisting only of Strawson's (Individuals, 1959) 'features' be sufficient? When we declare that 'It's raining' we are drawing attention to a feature (raining) without being committed to any particular object that has that feature. Smith suggests we begin by thinking of the physicist's world as populated not by objects but field-densities. This field-theoretic description can be comprehensive while admitting only of field-densities for a small range of properties (for example, gravitational fields, electromagnetic fields, etc.).

Smith suggests that the common-sense world of middle-sized objects is an achievement of our representational practices. Representation is achieved when one aspect of the mish-mash of fields is able to separate in a certain way from the rest of the mish-mash. This region, the 's-region', is (or is becoming) the subject-something that represents the world. Smith first emphasizes the distance required between the representation and the represented, and secondly the need for coordination between the two. This coordination is likened to the actions of an acrobat who dances around a stage, but keeps a torch beam focused on one spot. The torch must undergo dramatic changes in orientation to maintain its focus at one point. The intentional acrobat is similarly dynamic in keeping its intentional objects stably registered." (p. 220)

From: Hugh Clapin (ed.), *Philosophy of Mental Representation*, Oxford: Clarendon Press 2002.

---

"Why re-tool our ontology? If we don't, if we complacently (or opportunistically) cling to the standard inventory, we will commit what Smith calls inscription errors or pre-emptive registration: (1) a tendency for a theorist or observer, first, to write or project or impose or inscribe a set of ontological assumptions onto a computational system (onto the system itself, onto the task domain, onto the relation between the two, and so forth), and then, second, to read those assumptions or their consequences back off the system, as if that constituted an independent empirical discovery or theoretical result. (Smith, On the origin of objects 1996 p.50) Pre-emptive registration is a sort of metaphysical anachronism, back-projecting onto our vision of ultimate-or at any rate more fundamental reality a category or assumption that is in fact the effect or artefact of some later, higher-level, more 'expensive' development." (p. 224)

## Notes

(1) The term 'inscription error' is from Smith (1996). Since writing the book, Smith has shifted to using the phrase 'pre-emptive registration,' on the grounds that it is more illuminating (based on 'pre-emptive representation', from Cussins, Constructions of thought, in preparation).

From: Daniel Dennett: "Brian Cantwell Smith on Evolution, Objectivity, and Intentionality", in: Hugh Clapin (ed.), *Philosophy of Mental Representation*, Oxford: Clarendon Press 2002.

---

"The first remark has to do with the project of naturalizing ontology. 'Why bother?' asks Dennett. The main reason, of course, is because I believe the subject matter demands it. What ends up as a methodological commitment is grounded in an empirical claim: that the theory of ontology and the theory of representation and intentionality are about intrinsically interconnected phenomena. To study one without studying the other would be like studying time without studying space. Time is

not space, of course; no one thinks they are identical. But you would not get an adequate account of either space or time by studying it on its own. So too, I believe, for representation and ontology. How things are and how we take them to be, though by no means identical, are co-constituted in intricate ways.

I might say that I haven't always believed this.(*) During the 1980s I spent a long time trying to develop a theory of representation independent of ontology. I was particularly interested in taxonomies of representational types (symbols, icons, descriptions, models, simulations, etc.)-a theory, I might say, in which isomorphisms figured. Now I didn't have the smarts to invent targets to do the work that representations couldn't do. But my fundamental problem was that I couldn't hold the ontology fixed -- couldn't stabilize it adequately-in order to develop satisfying accounts of the plethora of correspondences that held between them. I was unable to determine (except by fiat, which didn't satisfy me) which items were objects or basic elements, which were properties of those elements, and which were relations among them. Small variations in how I registered the basic domains wreaked havoc with how I ended up classifying the representations defined over those domains. In the end I was forced to admit that the (ontological) question of whether something was an object could not be answered except with reference to the (epistemological) question of whether it was being objectified by a representing or cognizing subject. That is: my independence assumption did not work. So there is a lot of failure behind this claim that representation and ontology are parts of the same subject matter. That really is the bottom line.

So I started over, to reconstruct ontology and representation together. It is not just an exercise, at the end of which you end up with the same recognizable parts. The theory that comes out-the benefits it gives you -- are different."(*) That's not quite true. What's more accurate is that I haven't always approached the subject, in my intellectual work, from an integrated perspective. Even in graduate school, I believed that ultimately they would have to be understood together. In fact my doctoral dissertation (1982) started out as one chapter in an integrated but unwieldy metaphysical project that, at the time, I was hopelessly unprepared to complete. On the origins of objects is essentially what that project turned into." (p. 238)

From: Brian Cantwell Smith, "Reply to Dennett", in: Hugh Clapin (ed.), *Philosophy of Mental Representation*, Oxford: Clarendon Press 2002.

---

"The identification and re-identification of objects involves an epistemic process of abstraction over the infinitely rich (and often surpassingly messy) ur-structure of the world. Among other things, the normative character of the intentional projects that agents are engaged in, when they commit these acts of abstraction, figures in the resulting 'clumping' of the world's effectively infinite detail. To be an object is to be a region or patch of the world that is successfully abstracted -- where the issue of 'success' is tied into the normative conditions governing the dynamic project of which the act of abstraction is a constitutive part. The fundamental character of (what it is to be) an object is thus intrinsically hooked into the intentional life practices of the objectifying subject.

One more point on this topic. As a way to muster support for simply availing ourselves of 'common-sense ontology', Dennett says 'Look, why not just assume sub-atomic particles and tables and mountains and galaxies, in the way that science does?' This leads me to mention a radical thesis that I hold, although I can't give it much defence here: namely, that science may not be committed to objects at all. Consider: an amoeba splits. Biology doesn't care about the individuals in the situation: whether one amoeba died and two new ones were born; or whether we now have a spatial distribution of unitary amoeba-ness; or whether one of the two emerging amoebae is the original one, and the other one is new; or any other possibility. Another example: in California I own an ancient redwood tree that has clumps of very substantial shoots (some as much as 50 feet high) sprouting around its base. How many redwood trees are there? Science doesn't know, and science doesn't care. Similar conclusions hold for fog, for the units of selection, for a myriad other examples. What this leads me to believe is that scientific laws (like animals) may in fact deal only in features; and that the objects we think of as constitutive of science may merely be simplifying epistemic devices that allow humans to calculate. Objects in science, that is, are in my view properly understood as part of the epistemic apparatus involved in the conduct of science as an intellectual activity (on a par with mathematical models); they are not ontological commitments of the theory as a whole.

Put it this way: ontology and abstraction need naturalizing as much as meaning, semantics, and content. Assuming a 'standard ontological inventory' for purposes of giving a naturalistic account of

intentionality, as Dennett suggests, is thus a doomed project: it is viciously circular. Think about how appalled we would be (or anyway naturalistically unsatisfied) if someone were to propose a theory of representation that dined out on intentional notions, as if they were freely available. The naturalistic challenge is to explain intentionality without viciously presuming intentionality. A similar moral holds for ontology, in my view. Because ontological categories are in part intentionally constituted, attempting to explain representation while dining out on ontology is, for analogous reasons, fatally circular." (pp. 241-242, notes omitted)

From: Brian Cantwell Smith, "Reply to Dennett", in: Hugh Clapin (ed.), *Philosophy of Mental Representation*, Oxford: Clarendon Press 2002.

## Main publications

1.  Smith, Brian Cantwell. 1982. "Linguistic and Computational Semantics." In *Proceedings of the 20th Conference on Association for Computational Linguistics*, edited by Bates, Madeleine, 9-15. Cambridge: Bolt Beranek and Newman Inc.

2.  ————. 1986. "Varieties of Self-Reference." In *Theoretical Aspects of Rationality and Knowledge. Proceedings of the 1986 Conference on Theoretical Aspects of Reasoning About Knowledge*, edited by Halpern, Joseph Y., 19-43. San Francisco: Morgan Kaufmann Publishers Inc.

    Abstract: "The significance of any system of explicit representation depends not only on the immediate properties of its representational structures, but also on two aspects of the attendant circumstances: implicit relations among, and processes defined over, those individual representations, and larger circumstances in the world in which the whole representational system is embedded. This relativity of representation to circumstance facilitates local inference, and enables representation to connect with action, but it also limits expressive power, blocks generalisation, and inhibits communication. Thus there seems to be an inherent tension between the effectiveness of located action and the detachment of general-purpose reasoning. It is argued that various mechanisms of causally-connected self-reference enable a system to transcend the apparent tension, and partially escape the confines of circumstantial relativity. As well as examining self-reference in general, the paper shows how a variety of particular self-referential mechanisms --- autonymy, introspection, and reflection --- provide the means to overcome specific kinds of implicit relativity. These mechanisms are based on distinct notions of self: self as unity, self as complex system, self as independent agent. Their power derives from their ability to render explicit what would otherwise be implicit, and implicit what would otherwise be explicit, all the while maintaining causal connection between the two. Without this causal connection, a system would either be inexorably parochial, or else remain entirely disconnected from its subject matter. When appropriately connected, however, a self-referential system can move plastically back and forth between local effectiveness and detached generality."

3.  ————. 1987. *The Correspondence Continuum*. Menlo Park: Center for the Study of Language and Information.

4.  ————. 1995. "The Limits of Correctness in Computers." In *Computers, Ethics and Social Values*, edited by Johnson, Deborah G. and Nissembaum, Helen, 456-473. Englewood Cliffs: Prentice Hall.

5.          ———. 2001. "The Language of Matter." In *Faith in Science: Scientists Search for Truth*, edited by Richardson, Mark W. and Slack, Gordy, 51-69. London: Routledge.

6.          ———. 2002. "God, Approximately." In *Science and the Spiritual Quest: New Essays by Leading Scientists*, edited by Richardson, Mark W., 207-232. London: Routledge.

7.          ———. 2002. "Cummins - or Something Isomorphic to Him." In *Philosophy of Mental Representation*, edited by Clapin, Hugh, 170-190. Oxford: Clarendon Press.

8.          Cummins, Robert. 2002. "Comments on Smith on Cummins." In *Philosophy of Mental Representation*, edited by Clapin, Hugh, 191-218. Oxford: Clarendon Press.

9.          Dennett, Daniel. 2002. "Brian Cantwell Smith on Evolution, Objectivity, and Intentionality." In *Philosophy of Mental Representation*, edited by Clapin, Hugh, 222-236. Oxford: Clarendon Press.

10.        Smith, Brian Cantwell. 2002. "Reply to Dennett." In *Philosophy of Mental Representation*, edited by Clapin, Hugh, 237-292. Oxford: Clarendon Press.