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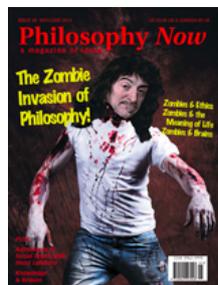
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Science

On Naturalism

Our philosophical science correspondent **Massimo Pigliucci** reports from a workshop.

The term 'naturalism' has a long and complex history in modern philosophy. W.V.O. Quine famously advocated what has come to be known as a 'naturalistic turn' for philosophy as a discipline, meaning that philosophical thought should become continuous with the natural sciences – even claiming that epistemology (theory of knowledge) is nothing but applied psychology.

These days, I would guess that most philosophers consider themselves naturalists, even though they may actually reject quite a bit of Quine's philosophy. The N-word, in their case, may mean anything from the minimalist statement that no supernatural realm is allowed in philosophizing (with all due respect to Plantinga and similarly-minded members of the theological rear guard) to the more nuanced, quasi-Quinean position that philosophy needs to take science on board to make progress (see, for instance, the 'naturalistic metaphysics' proposed by James Ladyman and Don Ross in their 2009 book *Every Thing Must Go: Metaphysics Naturalized*).

So I was intrigued when the cosmologist Sean Carroll invited me to a three-day workshop entitled 'Moving Naturalism Forward,' to be held in a beautiful location in the Berkshire Mountains of Massachusetts. The agenda was simply to get a number of scientists and philosophers together to participate in an open discussion on the many facets of naturalism. Other than Carroll and myself, the invitees included Jerry Coyne (biology), Richard Dawkins (biology), Terrence Deacon (anthropology), Simon DeDeo (complex systems), Daniel Dennett (philosophy), Owen Flanagan (philosophy), Rebecca Goldstein (philosophy), Janna Levin (physics), David Poeppel (neuroscience), Alex Rosenberg (philosophy), the above mentioned Don Ross (economics), and Steven Weinberg (physics).

Three main ideas emerged from this unusual gathering: (i) there is no (sensible) philosophy that is not a naturalistic philosophy; (ii) there is disagreement on the issue of reductionism; (iii) there is disagreement on the implications of naturalism for crucial philosophical questions, particularly concerning morality and free will.

Point (i) was perhaps inevitable given the sample that Carroll invited to the workshop; but as I said above, I also think this idea reflects the consensus of professional philosophers. I really can't recall going to a session of the American Philosophical Association, or listening to a colloquium in my own department, and hearing a non-naturalistic take on any philosophical issue whatsoever.

What was more interesting was the discussion of points (ii) and (iii), which are actually related to each other, and which brought out significant disagreements among the participants. Take reductionism first. To begin with, there is a distinction to be made between *ontological reductionism* (dealing with the nature of existence) and *epistemic reductionism* (dealing with our knowledge of what exists). The first one amounts to the claim that everything in the universe is not just compatible with, but metaphysically reducible to the foundational stuff of physics. By contrast, to deny *epistemic* reductionism is to make the trivially true claim that we cannot now, nor will we probably ever, *actually* use theories in fundamental physics to explain and predict everything else. (There ain't gonna be no quantum mechanical theory of Shakespeare's sonnets.)

It seems to me that, at least at first sight, ontological reductionism goes against the available empirical evidence, in that the universe appears to be characterized by layers of complexity, with new types of behavior of matter 'emerging' with increasing complexity. (For example the properties of biological communities don't make sense in terms of the behaviors of the individual species making up those communities.) If this is so, then one needs some extra empirical reason to accept ontological reductionism. I asked Nobel physicist Weinberg why he thought ontological reductionism was true, to which he responded that he saw "no reason in principle" for it to be wrong. Wait a minute, I replied, this is either an argument from ignorance (*ouch!*) or, at best, a promissory note that Weinberg knows can never be cashed because of our practical limits.

Moreover, there are at least tentative positive reasons to reject greedy reductionism (i.e., reductionism 'all the way down') in the form of interesting work (done by physicists, no less!) on phase transitions as models of true emergence. (It's complicated; it has to do with the role of mathematical singularities in describing the qualitative transition between different forms of matter. Perhaps I'll write a column on this soon).

What about (iii), the implications of naturalism for morality and free will? Here the positions ranged from self-avowed nihilism (Coyne and Rosenberg), to classic Dennett-style compatibilism, to (again) the invocation of complexity and emergence (Deacon, DeDeo, Flanagan, Goldstein, Poeppel, Ross and yours truly). It was interesting to see so many people who all subscribe to the same basic philosophical view of the universe, and who all agree that science (be it physics, biology, neuroscience, anthropology or systems theory) is crucial for any progress in understanding, and who nonetheless still managed to diverge pretty sharply on what exactly those commitments entail.

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But for me perhaps the most fascinating aspect of the workshop was to see that it is actually possible – and even fun! – to get together scientists and philosophers with diverging opinions who still managed to engage in a productive and polite conversation (not to mention the sharing of quite a few glasses of wine or beer) for so long and so well. Perhaps there is still hope for the revival of a broader, philosophy+science, understanding of the world after all.

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Massimo Pigliucci is Professor of Philosophy at the Graduate Center of the City University of New York. He is the author of [Answers for Aristotle: How Science and Philosophy Can Lead Us to A More Meaningful Life](#) (Basic Books, 2012) – [reviewed](#) in this issue. His philosophical musings can be found at www.rationallyspeaking.org.

- *The full workshop discussions are available on video: www.preposterousuniverse.com/naturalism2012/.*

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