On science and philosophy

Massimo Pigliucci

I have noticed that those who comment on my writings often show two interesting and complementary attitudes: a fundamental distrust of philosophy, coupled with an overly enthusiastic endorsement of science. Since my personal career has been marked by experiences in both fields and by a strong belief that the two enterprises are complementary and not adversarial, I feel it is time to make some comment on this general issue.

It is perhaps appropriate to tackle the problem at the beginning of the new decade, considering that last year marked not just the one hundred and fiftieth anniversary of Charles Darwin's *The Origin of Species*, but also the fiftieth anniversary of C. P. Snow's famous essay *The two cultures*, on the intellectual divide between the sciences and the humanities. In his essay, Snow (rightly) chastised what he saw as an unjustifiable attitude of intellectual superiority on the part of people from the humanities, ridiculing scientists who don't read Shakespeare, while openly admitting complete ignorance of the second principle of thermodynamics.

But the problem cuts equally on the other side, for instance when physicist Steven Weinberg complains that philosophy hasn't answered any scientific question. But why should that be the goal of philosophy? We already have science to help us solve scientific problems; philosophy has different goals and uses different tools. By the same token, why not ask art critics to produce paintings, for instance, or editors to write books?

Science, broadly speaking, deals with the study and understanding of natural phenomena, and is concerned with empirically testable hypotheses to account for those phenomena. Philosophy is much harder to define. Broadly speaking, it can be thought of as an activity that uses reason to explore issues such as the nature of reality (metaphysics), the structure of rational thinking (logic), the limits of our understanding

(epistemology), the meaning implied by our thoughts (philosophy of language), the nature of the moral good (ethics), the nature of beauty (aesthetics) and the inner workings of other disciplines. Philosophy does this by methods of analysis and questioning that include dialectics and logical argumentation.

Now, apparently it needs to be stated that: philosophy and science are two distinct activities even though science started as a branch of philosophy; they work by different methods (empirically-based hypothesis testing in contrast to reason-based logical analysis); and they inform each other in an inter-dependent fashion—science depends on philosophical assumptions that are outside the scope of empirical validation, but philosophical investigations should be informed by the best science available.

So when some commentators defend the position that science can mount an attack on all religious beliefs, they are granting too much to science and too little to philosophy. Yes, science can empirically test specific religious claims, such as intercessory prayer, the age of the earth, and so on, but the best thinking about the concept of, say, an omnibenevolent and omnipotent god, is philosophical in nature. Why, then, not admit that by far the most effective way to examine religious claims is by combining science and philosophy, rather than trying to arrogate to either discipline more epistemological power than each actually possesses?

Another common misconception is that philosophy, unlike science, doesn't make progress. This is simply not true, unless one measures progress by the—scientific—standard of empirical discovery. But that would be like accusing the Italian soccer team of never having won a rugby tournament. Philosophy makes progress because dialectical analysis generates compelling objections to a given position, which lead to either an improvement or the abandonment

of said position, and so on. For instance, ethical theories (moral philosophy), or theories about the nature of science (philosophy of science), have steadily progressed so that no contemporary professional philosopher would consider herself a utilitarian in the original sense intended by Jeremy Bentham, or Popperian falsificationist—just in the same way in which no scientist today labels herself a 'Newtonianist'.

The process I have described may never reach an end result, but neither does science. Scientific theories are always tentative, and they are always either improved on or abandoned in favour of new ones. So how come we are willing to live with uncertainty and constant revision in science, but demand some sort of definitive truth from philosophy?

Now, why is it that so many people take sides on a debate that doesn't make much sense, rather than rejoicing in what the human mind can achieve through the joint efforts of two of its most illustrious intellectual traditions? I think the answer here is no different from the one available to Snow fifty years ago: people in the humanities are afraid of cultural colonization, while scientists have been made arrogant by their recently acquired prestige and enhanced financial resources. Academic specialization and the ability to follow across the internet only people with whom we already agree are only exacerbating the problem. But is it not time to move beyond this intellectual parochialism and make a serious effort to bridge Snow's divide?

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