

Kuhn versus Popper

The Struggle for the Soul of Science

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Kuhn and Popper are maybe the two most well-known philosophers of science. It is natural to pit them against each other as representing fundamentally opposed views on science. Yet there is no real contradiction between their views, as opposed to their impacts, both incorporating important parts of the views of the other. Yet, they provide different emphasis.

Popper is the older man and has a long career as a writer and intellectual, although recognition was rather slow in coming. It is worth remarking that what made him famous was not his main work on the logic of scientific inquiry, but his excursion into the history of ideas and his concern for politics as manifested in the two volume work on the Open Society. His work on science of the 30's was not available in English until the end of the fifties.

Kuhn made a meteoric rise in connection with his one book - *The Structure of Scientific Revolution*, published in 1962. Apart from that he really did not expound on his ideas. Did he (unlike Popper?) have nothing more to say. The impact was tremendous, and usually when that happens it is less due to inherent merit than happening to fall into a congenial setting. The times were really prepared for someone like Kuhn.

Popper is often resented as a normative philosopher telling scientists what they should do; while Kuhn has been regaled as a descriptive sociologist, revealing the inner works of the scientific community. As the author rightly divines, Popper is really democratic and anti-authoritarian, while Kuhn is elitist and authoritarian. Such a realization, if more universally shared, should really undercut the reputation of Kuhn in our age. Personally I find him overrated and misunderstood. And of course the former would not be possible without the latter. What Kuhn says in effect is that science is done by paradigm, i.e. according to certain shared standards and convictions. No one who is not fully versant with the paradigm is entitled to attack it. To attack science you need the necessary competence. Truth is nothing absolute but defined by the paradigm. This idea must have appealed to a lot of intellectuals. In short, truth is a social construct, nothing more nothing less. I doubt that Kuhn would have agreed with that, after all he was being misunderstood and hence exalted. As opposed to this view one should bring forward the falsification criteria championed by Popper. What it really means, is of course not a methodology for science as much as an articulation of what is the bottom line. According to Popper scientists should be accountable. You do not need to be an expert to challenge the findings of science, between any two parties there is at least some common ground. The further they are apart, the less common ground, but still there is always enough. Having established the common ground a test can be designed the outcome of which will have similar interpretations. If you want to convince a non-expert of the construction

of an Atomic Bomb, you do not present the theoretical explanations behind, which most likely will for most people be so much mumbo-jumbo, you simply have one exploded. Seeing is believing, as the saying goes. Here the common ground is as low as you can find. Thus falsification serves a very important political purpose. It provides the essence of democracy. Everyone is entitled to an opinion, and everyone can in principle overthrow established truth.

Now of course Kuhn is not opposed to that. Paradigms change for some reason, and the reason is that what once had explanatory power now fails to have it in view of new phenomena. Something has to be done. Truth may be a social construct, but only up to a point. Eventually a misguided paradigm comes up against reality. Something has to give. But to Kuhn a change of paradigm is not without "bloodshed". The old scientists have to retire and die and allow the younger generation to take over. While for Popper, at least ideally, a single turf of grass may overturn a big load, for Kuhn it is not so much the matter of one event as a steady stream of ones. Living with contradiction is a fact of life, at least in everyday life, and to a large extent also in scientific life¹. Popper, at least on the face of it, takes a more categorical stand. Then of course there is nothing perverse about falsification, we do it all the time in everyday life. As Kuhn remarked, it is thanks to falsification and thus the closing off of avenues of exploration in science, there is a notion of progress in those very endeavors, as opposed to in the humanities, where nothing is really rejected. I would say that thanks to this closing off, science is able to penetrate far deeper into the configuration space of ideas. An important part of learning is forgetting.

While the author once was under the spell of Kuhn, he now clearly has taken the side of Popper. And as is not unusual in such conversions, a forsaken idol is being smashed. Kuhn is compared to Heidegger, both being presented as fashionable philosophers, who do not really deserve the special treatment they are accorded.

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¹ Chomsky stresses the fact that one could live with contradictions, that they usually iron themselves out, and that one should not put too much emphasis on them, especially not in an initial stage of a theory being worked out.