Paradigm Man

Philosopher of science **Jerome Ravetz** on a new **Thomas Kuhn** biography – whose 'Structure of Scientific Revolutions' spawned unlikely revolutionary high-life beyond the walls of academe.

Thomas Kuhn, A Philosophical History For Our Times by Steve Fuller, University of Chicago Press, Chicago and London, 2000.
The Road Since Structure by Thomas S. Kuhn, University of Chicago Press, Chicago and London, 2000.

Of all revolutionaries, Thomas Kuhn must have been the most reluctant. He had little interest in politics, either general or concerning science. Nor did he have a grand passion about science as a calling, or way of life. In later years, he was embarrassed that some of his more radical statements about science had been taken so literally.

Yet, a revolutionary he was, in effect, if not in intention. Working through his own narrow and apparently idiosyncratic agenda, he dethroned Science from the honoured role it had occupied since the Enlightenment. In his apparently conversational and artless way, in *Structure of Scientific Revolutions* he described a practice that had little to do with the search for Truth, and none whatever with the quest for the Good.

Kuhn enriched the English language, and that is no mean feat for a philosopher. Everywhere one sees 'paradigms', an old word with a new flavour. I say 'flavour' rather than 'meaning', for Kuhn was far from precise or consistent in the meaning he gave to 'paradigm'. Indeed on one classic occasion a leading philosopher announced the discovery of nearly two dozen meanings for 'paradigm', but then went on to describe Kuhn as the most important philosopher of science of the time.

What was this new flavour that Kuhn brought to 'paradigm', that was to prove so revolutionary? As applied to his conception of science, it brought an element of the arbitrary (his own term) to the endeavours of scientists. He had grown up with an unquestioning acceptance of the popular, naïve view that science consists of a process of piling one fact on top of another, with the Laws of Nature occasionally manifesting in a great discovery. Rejecting this view of science as cumulative, he put in its place a scheme of successive discrete 'paradigms', unquestionable frameworks in which the 'puzzle-solving' of 'normal science' takes place. And the change from one such paradigm to another is not a matter of smooth transition or even orderly debate, but rather an intellectually violent 'revolution.' In these, the conflicting paradigms are 'incommensurable', and with the victory of the new over the old, the world-view of that part of science changes irreversibly, including the rewriting of its history. Hence it is fair to say that Kuhn's science alternates between dogmatic puzzle-solving and irrational revolutions.

Kuhn's colleagues in the philosophy of science recognised the subversive implications of this scheme, and were not pleased. There was one historic occasion, when Sir Karl Popper assembled the whole British philosophy of science community in order to refute Kuhn; only to find them quite appreciative although critical. And in spite of Kuhn's eminence (his book sold upwards of a million copies) he never gained the respect of his colleagues in the U.S.A. At Berkeley, he was blacklisted from a Chair in Philosophy; and when he eventually wanted to return to Cambridge, Mass., he didn't even bother to contact the historians of science at his alma mater, Harvard, but instead joined the low-prestige humanists at M.I.T.

But why should so many people have been so excited by this new flavour of the word 'paradigm' by this somewhat eccentric self-taught philosopher? What did they find in it, that told them something so new and important about the world that the term became common currency?

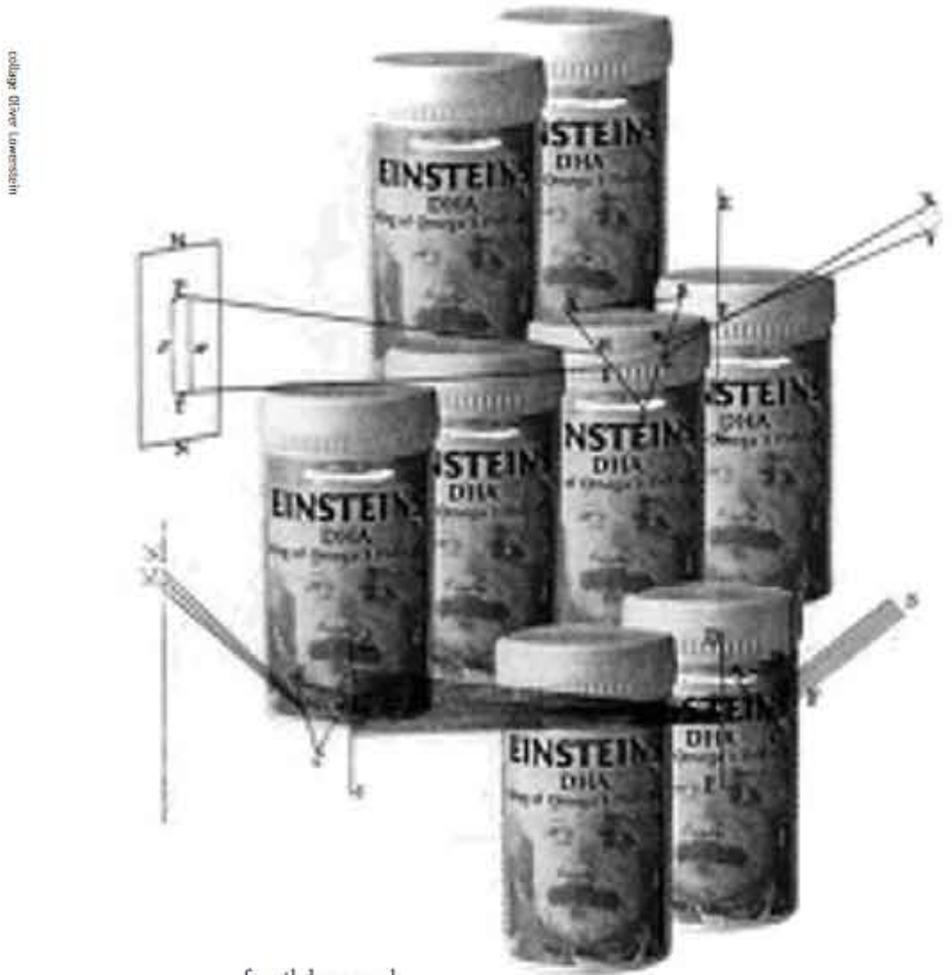
The answer may lie partly in timing. *Structure* was getting into college bookshops around the same time as the Cuba missile crisis (when everyone could see that militarised science had brought us to the very brink of extinction), and also *Silent Spring* (the first effective warning of man-made ecological doom). Such incidents as these revived the 'Frankenstein' image of science, in relation to which the writings of the leading philosophers of science were a boring irrelevance. Later, the great maverick philosopher Paul Feyerabend had an illuminating experience, contrasting those scholastic doctrines to the realities of Berkeley in the period of The Movement and The Counter-Culture.

So, by the time of the turbulent '60's, the moral authority of Science was taking a hard knock. To the worried question raised by Jacob Bronowski, how could the noble truths of science lead to such evils, Kuhn provided an answer: they weren't such noble truths after all. He even went further, accusing the spokespersons of science, including the scholars and teachers, of dogmatically purveying a misleading picture of the whole enterprise. And as the decade of the 60's wore on, with the traditional American self-righteous complacency increasingly battered by events, the relativist message in Kuhn's book was increasingly popular among students. By the end, 'paradigm' was imprinted on one aspect of the consciousness of a generation as firmly as 'Yellow Submarine' was on another. Kuhn's dismay at this outcome of his private quest was, historically, quite irrelevant. And until such time as science regains its Enlightenment status, 'paradigm' will be there to mock its fall.

The two books that provide the occasion for these reflections offer complementary sources for the story. Kuhn's own essays in *The Road Since Structure* are now valuable particularly for the long autobiographical interview. The philosophical papers are impressive for their air of dated, dusty irrelevance, as if they were relics of pre-Kuhnian philosophical debates. Is this what the great revolutionary worried about, while his doctrines were transforming the image of science for a generation? Sadly, yes.

By contrast, Steve Fuller provides a rich tableau of contemporary context and historical roots for Kuhn. His book *Thomas Kuhn, A Philosophical History for our Times* is vintage Fuller. Brilliant, learned, provocative and occasionally eccentric, its main fault is that it is too long. When all is said and done, his main thesis seems to be that Kuhn was a Bad Thing for the social studies of science. This was because *Structure* was embedded in the culture at Harvard where the President, Kuhn's mentor James Conant, was a typical and very powerful Cold War intellectual. In effect, Kuhn's work functioned as a decoy, directing scholarship away from a social critique of science.

My own experience of the period indicates other sorts of influences. The silencing of politically radical critiques, of any aspect of American culture, was accomplished during the 1950's, when Senator Joseph McCarthy was the most notorious witch-hunter but far



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