

Issue no. 5, 2001

Real Science Is Pluralist

Edward Fullbrook

Copyright: Edward Fullbrook, 2001

You may post comments on this paper at

<https://rwer.wordpress.com/comments-on-rwer-issue-no-100/>

Introduction

Fifty years from now, when historians of ideas write about how economics turned away from scientism and toward science, they may identify the pivotal event as the appearance of Robert Solow's article in *Le Monde* (3 Jan. 2001). Most economists living today grew up with the idea, even if not always agreeing with it, that there is and should be a master theory, neoclassicalism. But the idea of a nation, the United States, claiming mastery over the theoretical core is not one that often has been publicly proclaimed. Yet that is the implied message that leaps from every paragraph of Solow's article, and whose aftershocks are, as I write, awakening economists from their slumbers.

Nevertheless, those future historians will be wrong if they hold Solow to account for more than being just an average guy who opened his mouth in the wrong place at the wrong time. Solow's article merely manifests in nationalistic form an ideology that has choked the social sciences, economics in particular, for as long as most of us can remember. Let me try to explain.

Recently I wrote a paper concerned with identifying within a theoretical context a range of economic phenomena. It focuses on categories of market behaviour which, on the one hand, are well-known, commonplace, completely respectable and increasingly dominant, but which, on the other hand, are excluded from the theoretical core of mainstream economics. One cannot easily imagine a similar dysfunctional state persisting in a natural science -- such as, for example, physics refusing to consider micro-physical phenomena because they don't observe the metaphysics of gravitational theory. But of course such states of affairs in economics are the rule rather than the exception, and it is worth considering why this is so. I am going to filter this brief inquiry through a short passage by Roy Bhaskar.

In *The Possibility of Naturalism* (1979), he writes as follows;

one has in science a three-phase schema of development in which, in a continuing dialectic, science identifies a phenomenon (or range of phenomena) [that's phase one], constructs explanations for it and empirically tests its explanations [that's two], leading to the identification of the generative mechanism at work [that's three], which now becomes the phenomenon to be explained, and so on. [and that's the dialectic] [p. 12]

My view is that, with one notable exception, this dialectic largely failed to function in 20th-century economics, and that this breakdown resulted from the discipline's refusal to enter into Bhaskar's phase one.

Instead of identifying phenomena which it then seeks to explain, economics avoids the dialectic by only considering phenomena consistent with existing explanations. In recent decades, this upside down "science"---this choosing what one sees in order to justify a theory and its ontology, rather than using theory to understand intransitive realities, became hegemonic as economics construed support from new narratives of scientific practice, especially Thomas Kuhn's. I want to outline the negative role which I think philosophy of science, in spite of Bhaskar's work, has played in economics.

This requires me to say a few things about the philosophy of science, especially its relation to historical events. Last century's fascination with this previously obscure corner of philosophy seems to have been triggered by the acceptance of Einstein's theory of relativity. This event fits well with several narratives of scientific progress, including Bhaskar's. Unlike Bhaskar's, however, Popper's and Kuhn's narratives also fitted the meta-narrative which dominated geo-political perceptions from the 1940s onwards -- that is, that of global powers and ideologies battling it out until one gains total victory over the other. Popper indirectly, and one assumes unconsciously, brought this narrative structure into play by shifting the epistemological focus from scientific theories themselves to their dramatic encounters with tests designed to discredit them. The stylized exemplary case for Popper's narrative became the falsification and overthrow of Newtonian physics, by means of tests devised through the competing and victorious theory of the cosmos, Einsteinian physics. This story had instant appeal for an intellectual population accustomed to global conflict and submerged in Cold War mythology. It offered a simple, winners and losers storyline worthy of Hollywood, and echoed the major traumas and neuroses of the latter half of the century. So it was no wonder that by the 1960s even people who had never opened a science book could chatter about falsification.

The popularization of the putative ins and outs of scientific advance accelerated with the appearance in 1962 of Thomas Kuhn's *The Structure of Scientific Revolutions*. It was really this book that made philosophy of science box-office. It also, with its multi-faceted concept of the paradigm, provided economics with a rationalization for its worst practices, especially its head-in-the-sand approach to major kinds of economic phenomena. Recently, rereading Kuhn's book after a space of many years, it was a shock to be forced to reengage with the paranoid, bi-polar rhetoric and logic which through the 1950's and 60's shaped most public discussion in Kuhn's America. Kuhn himself is open about locating his book in this historical framework. In his Preface to the original 1962 edition, he writes, that his book was conceived and written over a period of 15 years, in other words, from the heyday of McCarthyism to the Cuban Missile Crisis and the height of the Cold War.

And it shows. The scenario which Kuhn, so skilfully, sketches regarding scientific endeavour is, in the main, the same as that which structured the more intemperate, more right-wing accounts of what was billed as the struggle between Communism and the Free World. Kuhn's book methodically transposes the Cold War narrative onto the competing-theories narrative of science. This transposition extends even to his vocabulary, with a heavy use of Cold-War buzz words and expressions like "subversive", "polarization", "crisis" and "crisis provoking", "techniques of mass persuasion", "allegiance", "commitment", "conversions", total "destruction" and "total victory", and of course "revolution". Others of Kuhn's most favoured expressions echoed then current geo-political equivalents. For example, "adherents" translates "patriots"; "incommensurability", no peaceful co-existence; "different world view", different ideology; "pre-paradigm", third-world; "rival theories", rival powers; and so on.

Kuhn also repeatedly foregrounds a parallel between paradigms and political institutions. For example, he writes, "Like the choice between competing political institutions, that between competing paradigms proves to be a choice between incompatible modes of community life." [94] It is this emotionally-charged us or them, all or nothing mentality which Kuhn's book seems to legitimate as the ethos of

science. "After the pre-paradigm period," writes Kuhn, "the assimilation of all new theories and of almost all new sorts of phenomena has in fact demanded the destruction of a prior paradigm and a consequent conflict between competing schools of scientific thought." [96] Kuhn's narrative makes the defence of one's paradigm community, through the elimination or marginalization of rival ones, the scientist's overriding goal. And it makes the identification of new sorts of phenomena, the first phase in Bhaskar's schema, something to be avoided like nuclear war.

Kuhn's paradigmatic, that is, **anti-pluralist** science does, however, make one fundamental concession to the notion of science as a pursuit of truth. Although Kuhn condones all manner of evasions and closed-mindedness, he posits a limit beyond which empirical realities count for more than loyalty to a community of belief, where, in his words, scientists "can no longer evade anomalies that subvert the existing tradition of scientific practice," and where in consequence a scientific revolution takes place. [Kuhn, p. 6]

But in social sciences, conditions rarely, if ever, exist for a revolution in the way Kuhn describes. Here paradigm changes are more likely to result from changes in socio-political forces than through any logic of scientific discovery. Unlike natural scientists, social scientists seldom come up against reality's hard-edged recalcitrances. With rare exceptions -- like The Great Depression -- the links between the social scientist's paradigmatic beliefs and the intransigent world around him or her are both conceptually tenuous and unconnected to the possibility of objective tests. Consequently, difficulties thrown up by external reality can -- when the paradigmatic, that is, anti-pluralist, ethos prevails -- be brushed aside or charmed away by rhetorical and formalistic devices, or, -- better yet -- as with all kinds of faiths, by wilful disregard for all phenomena inconsistent with one's beliefs.

For these reasons, Kuhn's narrative becomes, in the hands of economists, a formula for an eternal status quo, for the cessation of all significant change. It excuses exclusionary devices in defence of the dominant paradigm community, and it subordinates the advancement of economic knowledge to the upholding of a system of belief tied to a vast network of patronage.

These remarks presume that Kuhn's narrative fails as a generally fair description of development in the natural sciences, that in general the natural sciences are not opposed to registering awareness of new ranges of phenomena. So a few words are needed to support this view and to explain why I believe that Bhaskar's narrative, as encapsulated in the paragraph quoted at the start, is a vastly superior account of scientific practice -- superior both as a description of actuality and as an ideal.

The competing-theories narrative of scientific advance, in its various forms, builds its case primarily on the basis of examples drawn from physics. Yet even here it is easy to show that the now traditional view both fails to account for and runs counter to major developments. This holds especially for Kuhn's version, which turns on the notion of irreversible gestalts.

For several generations, fundamental research in physics has been focused primarily on "unification". Various schemes exist for characterizing "the unification process", but all describe a state of affairs incomprehensible in terms of the traditional competing-theories, anti-pluralist narrative of scientific development. Stephen Hawking, for example, explains the quest as follows.

Today scientists describe the universe in terms of two basic partial theories - the general theory of relativity and quantum mechanics. They are the great intellectual achievements of the first half of this century. Unfortunately, however, these two theories are known to be inconsistent with each other - they cannot both be correct. One of the major endeavours in physics today...is the search for a new theory that will incorporate them both - a quantum theory of gravity. [13]

Reading this passage through the competing-theories lens, as offered by Popper or Kuhn, invites total misunderstanding. Physicists perceive relativity and quantum mechanics not as competing theories championed by warring camps of physicists, but rather as different and complementary conceptual approaches to the fundamentals of physical reality. These two narratives illuminate separate ranges of phenomena in what unification physicists see as ultimately the same domain of inquiry, but which, until some more fundamental structure or generative mechanism is identified, cannot yet, if ever, be reconciled with each other. Rather than behaving paradigmatically, that is, ignoring the existence of micro phenomena because they contradicted both relativity and classical theory, 20th-century physics proceeded **pluralistically**. It got on with the difficult work of progressively identifying this range of phenomena and then constructing and testing new explanations. The physicists' dream of unification, with its implicitly deeper level of understanding than that of existing theory, arises directly out of its **pluralistic approach**. It allows for the peaceful co-existence of the two narratives, the heuristic significance of each being enhanced by the existence of the other. Physicists seek neither to discredit relativity or quantum mechanics, but rather to create, in Hawking's words, "a new theory that will incorporate them both".

Hawking's view of 20th century physics also contradicts Kuhn's narrative in another way. The central plot device in Kuhn's story of paradigmatic, anti-pluralist science is his portrayal of natural scientists as gestalt-bound, that is, as capable of thinking only within single conceptual systems. He identifies this intellectual incapacity as a sort of negative force which necessitates taking an anti-pluralist approach to science which then creates blockages to the advancement of knowledge, thereby creating pre-revolutionary states. But are scientists really so conceptually inept? Was John Stuart Mill really so wrong when he characterized the scientific imagination as the faculty for "mentally arranging known elements into new combinations"? [*System of Logic*, 433] Are scientists really incapable of shifting back and forth between seeing the world in different combinations, between, if you like, seeing the duck and seeing the rabbit?

If natural scientists were as gestalt-bound as Kuhn repeatedly alleges, then 20th-century physics could never have taken place. Shifting between narratives with radically different conceptual systems can be a daily occurrence for 20th-century physicists. For them conceptual agility -- that is, the ability to move freely between conceptual gestalts -- is imperative. Unlike theory replacement, unification of theories demands the ability to jump back and forth between conceptual systems. And even to become a physicist, one must learn to think within the conceptual frameworks of both relativity and quantum mechanics. All the rest of modern physics is derived from one or the other of these two theories whose "basic concepts", notes the physicist David Bohm, "directly contradict each other." [*Wholeness and the Implicate Order*, p. 176] General relativity conceives of matter as particulate; of physical objects as having actual properties; of all physical reality as determinate; and all events as, in principle, having a causal explanation. Quantum theory, on the other hand, conceives of matter as a wave-particle duality; of physical objects as having only potential properties within the given physical situation; of the existence of indeterminacy; and of the existence of events incapable of causal explanation. Conceptual differences and theoretical inconsistencies greater than these are scarcely imaginable. Yet, for nearly

a century, these two metaphysically dissimilar narratives have worked, not in competition, but in tandem to the produce what are arguably the greatest advances in the history of science.

Unlike Kuhn's narrative, Bhaskar's three-phase schema of scientific development sits comfortably with this history. It also suggests a way of advancing radical reform of economics. Taking Bhaskar's view of science, the question becomes how, in economics, do you kick-start the dialectic, when in the main it has been stalled for decades and when powerful institutional forces work to keep it from starting up again.

As previously indicated, my view is that the blockage of the first phase -- the identifying of phenomena -- has stalled economics. Here Bhaskar's verb "identifies" must be given a robust interpretation. Passive identification of economic phenomena not covered by existing theory is, for the reasons stated above, insufficient for getting economists to take them into account. To get from phase one to phase two -- that is, from identification to construction of explanations -- reformers must find a way through the defence mechanisms, mis-education and indifference with which, by tradition and Kuhnian anti-pluralist, ideology, the profession encases itself. This, I believe, argues for two kinds of initiative both directed at the identification of economic phenomena, but by different means.

First, economics will be resuscitated and made relevant to the urgent needs of the new century, only if roused from its ontological slumber. Wittgenstein characterized his kind of philosophy as "not a body of doctrine but an activity," whose "work consists essentially of elucidations." [*Tractatus*, 4.112] Because economic ontology has for so long been off-limits, much elucidatory activity regarding economics' concepts and the nature of economic reality, as in the work of Lawson and Stretton, is now called for. Economists and students must be led to a practical awareness of the open nature of economic existence and of the importance of internal relations, and of how these dimensions of economic reality mean that the deductivism of traditionalist economics excludes the identification of most economic phenomena from within the context of explanation. The ontological preconceptions and methodological pieties of traditionalist economics both mask from view the larger part of economic events and block inquiry into the structures which generate them.

In economics, the first stage of Bhaskar's schema has been trumped by devotion and obedience to an obscurant metaphysics. The re-education of economists to attend to these exclusions and to the possibilities which they imply, will, it is hoped, coax the discipline into engaging with a larger range of economic reality. Such elucidations not only create an intellectual space in which members of the pluralist vanguard can operate, but also provide respectability and justification for traditionalists contemplating post-traditionalist, post-neoclassical pursuits. Such work provides ordinary economists, especially the young ones, with the conceptual means of articulating their misgivings and intuitions, and in general of liberating their repressed awareness of all those phenomena whose relevance the anti-pluralism of their elders denies..

These elucidations serve to identify economic phenomena in a broad ontological way. Through a form of applied philosophical analysis, they explain why there exist vast tracts of unexplored territory and, at the same time, the reasons behind the notorious failure of traditionalist methods. But they identify the general nature and scope of socio-economic reality, rather than particular phenomena or ranges thereof.

So a second type of initiative for the identification of economic phenomena is also required. Compared to the first, it is less glamorous. But it is at least as important. As a lure away from traditional economics, philosophical enlightenment is most likely insufficient for the rank-and-file economist. He or she must also be enticed with concrete possibilities for research. To this end, conceptual frameworks must be

developed that bring into view ranges of economic phenomena that enter strategically into economic outcomes, but that are unrecognised by traditionalist conceptualisation. That there exists a surfeit of such possibilities is self-evident to the post-traditionalist economist. That their successful realization – the development of effective understandings of these phenomenal realms -- are now crucial to human welfare is, outside the economics community, accepted fact.

Author contact: edward.fullbrook@btinternet.com

You may post and read comments on this paper at <https://rwer.wordpress.com/comments-on-rwer-issue-no-100/>