

## COMMENT ON HANDS

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There should be no doubt that, as Wade Hands points out, the Popperian dominance in the methodology of economics in recent years has had some undesirable effects (Hands, this volume; see also Mäki, 1990a). To these belong two omissions among the objects of methodological studies, namely prevailing instrumentalist and essentialist beliefs and practices within the economics profession, both denounced by Popperian canons. As Hands further argues, the Popperian project as a realist project has encountered difficulties because of Popper's failure to provide an adequate explication of the intuitive notion of closeness to the truth (truthlikeness, verisimilitude). Two ways out of this latter impasse can be chosen. One is to proceed with the Popperian project without the idea of increasing verisimilitude as the aim of science. This is the option chosen by Watkins (1984). The other is to rebuild a realist notion of truthlikeness without the burden of Popperian methodology. Such non-Popperian explications have been provided by Niiniluoto (1987) and Oddie (1986). In the brief remarks which follow I attempt to outline an idea of how an economist with essentialist intuitions might view scientific progress as increasing truthlikeness.

Popper's *Die Logik der Forschung* (1934) was metaphysically neutral or indifferent. He admitted that he had *realist inclinations*, but this was not incorporated into his methodological system. It would seem that Popper's early followers in economics, such as the M<sup>2</sup>T group at the London School of Economics in the late 1950s and early 1960s (see de Marchi, 1988), are true to Popper in this respect, too. The revolution they proposed was essentially a methodological revolution. After all, realism would not have been a revolutionary idea at that time at the LSE: Lionel Robbins, emperor of the former reign, was no doubt a firm realist.

Popper introduced the notion of verisimilitude in 1960, but it was never adopted by Popperian methodologists of economics. Some of them, such as Mark Blaug, declare themselves to be advocates of realism, but they have not backed up this position with the Popperian notion of verisimilitude, or with any other well-developed doctrine of truth and truthlikeness. This implies that the reasons for the downfall of Popperianism in economic methodology have nothing to do with the failure of Popper's explication of the concept of truthlikeness.

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It is true that there is, after all, an instrumentalist flavour involved in Popperian scepticism. This may also explain the fact that, even though many economists have declared themselves advocates of Popperian methodology, they nevertheless simultaneously feel comfortable with instrumentalist beliefs and practices, with no appreciable interest in matters of truth. It is the Popperian dictum of *testing theories by their empirical implications* that seems to have played the main role in the reception of Popperian ideas by economists. And, after all, was not this dictum precisely the one that was presented as the fundamental message of the Friedman–Machlup position in the methodological discussions by economists in the 1950s and 1960s? Needless to say, the dictum itself does not imply instrumentalism. The important thing is that the notion of truth does not have any operational significance in Popperian methodology; this may also be the case in much of economics.

Popper (1963, pp. 103–5) defines *essentialism* as a doctrine which subscribes to the following three tenets:

1. Scientific theories ‘describe the “essence” or “essential natures” of things’ lying behind the appearances. Let us call this the semantico-ontological component of essentialism.
2. By so doing, theories provide ultimate explanations in the sense that such theories are ‘neither in need nor susceptible of further explanation’. Let us call this the ultimate explanation component.
3. The truth of such theories can be finally established ‘beyond any reasonable doubt’. Let us call this the certitude component.

There should be no doubt, in my view, that many economists think of the task of theory formation in terms of something like the semantico-ontological component of essentialism. They do, indeed, think that good – or the best, or the desirable – economic theories provide true descriptions of what is essential in the economy, to the exclusion of the inessentials or the appearances. The other two, both epistemological, components seem to be much less popular among economists.

It follows that very few economists subscribe to the radical essentialism defined in terms of all three, both semantic and epistemological, components. Ludwig von Mises is a famous advocate of such a radical view. Many others, even Milton Friedman in a few passages of his 1953 essay, can be interpreted as espousing a weak version of essentialism consisting of the semantic component (see Mäki, 1990b). This means that, if we follow Popper by defining ‘essentialism’ in his narrow way, we manage to exclude weaker and probably rather popular forms of

economic essentialism from serious consideration within the Popperian framework.

To this we immediately have to add that elsewhere Popper himself subscribes to something that at least comes close to the semantico-ontological component of essentialism. In his *Realism and the Aim of Science* (1983, p. 137), he writes as follows:

. . . although I do not think that we can ever describe, by our universal laws, an *ultimate* essence of the world, I do not doubt that we may seek to probe deeper and deeper into the structure of our world or, as we might say, into properties of the world that are more and more essential, or of greater and greater depth.

Popper even calls this view 'modified essentialism'. Again, the problem with this is that the idea of science penetrating into deeper and deeper layers of the world has no adequate connection to Popper's methodological framework.

I shall now make a few speculative remarks on how weak or modified essentialism could be connected to the notion of progress, and whether and how it is being implicitly so connected in the research practices of the economics profession. I suggest, in rather intuitive terms, that the following forms of theoretical progress may occur in science:

1. Progress occurs when a theory is formed that gives a truthlike description of the essence or an essential layer of the object under study.
2. Progress occurs when a theory is formed that gives a more truthlike description than its predecessor of the essence or one of the essential layers of the object under study.
3. Progress occurs when a theory is formed that provides a truthlike description of a deeper essential layer of the object than its predecessor.
4. Progress occurs when a theory that gives a truthlike description of the essence of an object is expanded so as to give a truthlike account of the way(s) its essence or essential layer manifests itself.
5. Progress occurs when a theory that gives a truthlike description of the essence of an object is expanded so as to give a more truthlike account of the way(s) its essence or essential layer manifests itself.

It is difficult not to conflate these five forms of progress in Popper's framework, or rather the framework does not provide adequate tools for analysing the five forms. By using a bit of imagination, we can give them Lakatosian reformulations. The first step is to suggest that there

are metaphysical or ontic correlates for the elements in the theories of Lakatosian research programs. Let us call the correlate of the theoretical hard core the 'ontic core' and the correlate of the protective belt the 'ontic periphery'. On this reformulation, the hard core of a research program is a condensed statement of the allegedly essential features of the subject-matter (the ontic core), while the protective belt describes some of the relatively less essential features (in the ontic periphery), which none the less have an impact on the manifest behaviour of the objects under study. The conjunction of the hard core and the protective belt implies statements about the appearances or manifestations of the objects of the theory.

Progress in senses (1)–(3) then consists of either formulating a successful hard core or improving it or replacing it with a better one. Progress in senses (4)–(5) takes place on the belt of auxiliary statements that describe the ways in which the essential features combine with other features so as to constitute the appearances of the object under study. A major part of progress in science is of kind (5). This is the case with 'mature' science in particular (see Nowak, 1980; Krajewski, 1977). For instance, it seems obvious that progress in senses (1) and (3) has been absent in mainstream economics for a long time. An essentialist interpretation of the situation might refer to neoclassicism as a mature science that has discovered and theoretically described the ontic core of the economy and now takes as its major task the refinement and application of the theory without questioning the statements of the hard core.

One difficulty with the Popperian notion of verisimilitude is that it is not adequate for discussing all of these five forms of scientific progress. The problem is that this notion is an attempt to explicate the idea that science approaches or should approach the true description of the whole of the actual universe. However such comprehensiveness is not required for progress to occur in senses (1)–(3) in particular. When trying to describe ontic cores or essences or essential layers, one deliberately omits most facts about the actual world. Such a description is an attempted theoretical isolation of the ontic core from peripheral factors. To speak about the truthlikeness of such descriptions, the Popperian concept will not do. As Popper (1963, p. 234) says, '[v]erisimilitude is so defined that maximum verisimilitude would be achieved only by a theory which is not only true, but completely comprehensively true: if it corresponds to all facts . . .'. This is, of course, a consequence of linking the notions of verisimilitude and 'content' together so as to vindicate his falsificationist methodology: a 'completely comprehensively true' theory is also maximal in regard to logical strength.

L. Jonathan Cohen (1980) makes a distinction between verisimilitude and what he calls 'legisimilitude'. He is critical of definitions of verisimilitude in terms of truth and falsity in regard to the actual world. Science, he argues, pursues truths about laws, understood as physically necessary truths. Such necessities are defined in terms of possible worlds. As Cohen (p. 500) points out, Popper (1959, pp. 432f) elsewhere accepts this notion of natural necessity, but 'he omits to consider its implications for the doctrine of verisimilitude'. Cohen suggests that, instead of verisimilitude, or truthlikeness, science is after legisimilitude, or lawlikeness.

Close to, but not identical with, Cohen's proposal is the distinction between 'descriptive truth' and 'theoretical truth', suggested by Theo Kuipers (1982). A statement is descriptively true if it is true in the actual world; a statement is theoretically true if it is true in all physically possible worlds (p. 347). Descriptive verisimilitude is then defined as closeness or likeness to descriptive truth and theoretical verisimilitude as closeness to theoretical truth (pp. 352–7). Kuipers criticizes other writers on the topic for conflating the two kinds of truth and verisimilitude and for ignoring the fact that theoretical scientists aim at theoretical truth.

What unites Kuipers's suggestion with that of Cohen is the idea of scientific theory having natural necessities as its object. It is not altogether inconceivable to pursue truth about natural necessities in economics, as the popular use of counter-factual reasoning and the theoretical endeavours of Austrian and Marxian traditions indicate. However the idea may be unnecessarily restrictive for our purposes. Necessity is, of course, one possible attribute of essence. Some economists, however, may use essentialist terminology: 'this is the essence of the matter', 'these seem to be the essential features of the situation' and so on, without committing themselves to the notion of natural necessity. Therefore perhaps we would need a more general notion for expressing the intuitive idea of likeness to the essential truth about the economy – that is, likeness or closeness to the truth about essences or ontic cores in the economy. Labouring over an analysis of this intuitive notion is a task for another occasion, but let us suggest a name here: perhaps it could be called 'essesimilitude'. Forms (1)–(3) of scientific progress would then imply increasing essesimilitude.

No analysis of essesimilitude is currently available. It is obvious that such an analysis cannot be provided in the Popperian framework. More powerful and flexible frameworks, such as Niiniluoto's (1987), are needed.

We have found that Popper's philosophy of science contains both

what he calls 'modified essentialism' and the notion of natural necessity, but that these have not been adequately incorporated into his idea of verisimilitude. The methodology of economics might find some use for a notion of truthlikeness with these essentialist ingredients.

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