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Economics for Real. Uskali Mäki and the Place of Truth in Economics, edited by Aki Lehtinen, Jaakko Kuorikoski and Petri Ylikoski. Routledge, 2012, xiii + 280 pages.

Economics for Real aims to provide the first systematic and critical examination of the philosophy of economics of Uskali Mäki. The book brings together 12 articles by different authors who made important contributions to the issues Mäki has addressed in economic modelling and methodology. Most of these issues (e.g. truth, realism, rhetoric) have been discussed by prominent economists and methodologists. Nonetheless, Mäki's contributions to the related debates stand out in the contemporary intellectual landscape for their originality and relevance. Moreover, no comprehensive evaluations of Mäki's writings were previously developed, so this volume fills a significant lacuna in the literature.

The book examines several arguments proposed by Mäki over the last three decades. The articles, divided into four thematic groups, cover a commendably wide range of topics: the notions of truth, model and isolation (Part I); the ontological and epistemic status of commonsensibles in economics (Part II); the domain of economic theory (Part III); and distinct versions of scientific realism (Part IV). I lack the space here to discuss the contents of the individual articles in detail. For the purpose of this review, I will briefly outline the main points made by each contributor and connect them to overarching themes in Mäki's work. I will then consider how the contributors' concerns bear on the merits of Mäki's views and conclude with a few comments on the book as a whole.

The introduction, by Aki Lehtinen, concisely explicates the main aims of the volume and summarizes Mäki's position on various issues. Lehtinen clearly illustrates how the various articles relate to Mäki's contributions and draws insightful connections between different tenets of his philosophy of economics. Frank Hindriks examines whether economists' widespread reliance on unrealistic assumptions can be plausibly reconciled with a realist interpretation of their theories. Hindriks argues that two strategies commonly employed to do so – the 'truth-of-paraphrase strategy' and the 'significant-truth strategy' – allow for non-negligible falsehoods and therefore compromise the realist ideal of true theories. In his view, two other strategies – the 'future-truth strategy' and the 'truth-of-the-counterfactual strategy' – come closer to this realist ideal and are to be preferred.

Ilkka Niiniluoto compares Mäki's account of models as Isolations and Surrogate Systems (MISS) and Sugden's account of models as credible worlds. Niiniluoto neatly elucidates the main differences between Mäki's and Sugden's views of how models facilitate learning concerning their target systems. Moreover, he asserts that the concept of verisimilitude is a useful tool for clarifying both the nature and the function of scientific models. Daniel Hausman also focuses on Mäki's MISS account. Hausman praises this account for simultaneously encompassing a vast variety of models and offering an informative analysis of the notion of model. However, he criticizes Mäki for holding exceedingly optimistic views regarding what users can learn from models. Moreover, he contends that in attempting to provide a general view of models, Mäki unwarrantedly extends some claims concerning physical models to economic ones.

Till Grüne-Yanoff maintains that Mäki has put forward three dissimilar notions of isolation in his writings, namely: 'essential isolation', which consists in selecting a limited set of elements in the investigated target system and excluding the others from representation; 'formal isolation', which relates to model construction processes and leads from a modelling base to an isolated model; and 'minimal isolation', which eschews model building considerations and exclusively concerns the properties of the isolated model. Grüne-Yanoff critically compares these three notions of isolation and alleges that they play different roles in Mäki's works. Jack Vromen focuses on the notions of de-isolation, which consists in supplementing the explanatory variables in a model with additional ones, and re-isolation, which obtains when previously isolated factors are replaced with different ones. According to Vromen, Mäki's account of isolative modelling enables us to reconstruct the dynamics of various modelling disputes in economics. At the same time, Mäki's emphasis on the importance of isolation might misleadingly suggest that such disputes exclusively concern what explanatory variables should be included into models.

Francesco Guala takes issue with so-called commonsensible realism, roughly the view that since the entities posited by economic theory belong to our common-sense conception of the world, only radical sceptics would doubt the existence of theoretical entities in economics. Guala puts forward various criticisms of Mäki's and Hausman's arguments in favour of commonsensible realism. In particular, he argues that commonsensible realism is an unstable philosophical position, which tends to collapse into forms of behaviourism. Wade Hands also challenges Mäki's realist position. His analysis focuses on contemporary revealed preference theory, where terms like 'preference' allegedly have a radically different meaning than their commonsensical counterparts. Hands' main thesis, which echoes a point made by Hoover (1995) regarding macroeconomics, is that commonsensible realism is plausible only for specific subfields of economic theory.

Don Ross argues that Mäki's works provide useful tools for analysing and assessing the logical structure of isolation in model construction in economics. However, he criticizes Mäki for misidentifying the scope of economics and consequently failing to shed light on the relationships between this discipline, psychology and neuroscience. In doing so, he disputes Mäki's claim that economics begins from consideration of commonsensical aspects of reality and denies that the concepts at the core of economic theory (e.g. choice) derive from our commonsense ontology. John Davis discusses Mäki's criteria for identifying and evaluating putative instances of economic disciplinary imperialism. He devotes particular attention to Mäki's thesis that pursuit of theory unification through disciplinary imperialism may be justified only if specific ontological, pragmatic, and epistemological constraints are satisfied. Davis claims that since these constraints are unlikely to be satisfied, Mäki's account supports an exceedingly conservative position regarding the justifiability of economic disciplinary imperialism. Moreover, he proposes an alternative account of disciplinary imperialism based on a core-periphery model of economics as a collection of different research programs.

Kevin Hoover argues that the methodological thinking of econometricians exhibits widespread tensions between realist and anti-realist intuitions. He then draws on Charles S. Peirce's pragmatism (1958) to support an account of realism that purportedly complements Ronald Giere's (2006) perspectival realism and reconciles econometricians' intuitions. Jesùs Zamora Bonilla examines the 'rhetoric of science' debate between Mäki and Deirdre McCloskey and contends that this debate has left important questions unanswered. Zamora Bonilla illustrates how his game-theoretic model of scientific research can be used to address some of these questions. Moreover, he advocates viewing realism as an empirically informed conjecture about researchers' epistemic goals rather than as a philosophical thesis. Jaakko Kuorikoski and Petri Ylikoski focus on one version of realism frequently mentioned in social scientific research, namely Tony Lawson's critical realism, and criticize it in light of recent advances in the philosophy of science. In their view, Lawson's account suffers from severe insulation from mainstream philosophy of science and fails to provide useful tools for improving current modelling and explanatory practices in the social sciences.

Having outlined the book's contents, let me comment briefly on the individual articles. Most of the contributors provide informative insights concerning Mäki's philosophy of economics, which may serve as useful springboards for further discussion. At the same time, more cross-referencing between the articles would have helped the readers to better appreciate how distinct themes in Mäki's writings fit together. Moreover, some authors could have discussed Mäki's views in greater detail in their articles. For instance, both Hoover and Zamora Bonilla mention Mäki's works in exposing their theses, yet do not make fully clear how the claims they advocate bear on such works. For their part, Kuorikoski and Ylikoski provide a forceful critique of Lawson's critical realism and effectively expose some serious shortcomings in his account of contrastive explanations. Still, their harshly phrased criticisms of Lawson occasionally obscure, rather than clarify, their insightful comparison of Mäki's and Lawson's methodological approaches.

That said, the contributors put forward several thought-provoking challenges to Mäki's arguments. In the remainder of this review, I examine how Mäki's arguments fare in light of these challenges and make some suggestions as to how Mäki might respond to them. Spatial limitations compel me to simplify the discussion and gloss over issues that would deserve more detailed treatment. However, I shall play the devil's advocate and argue that most of the contributors' criticisms face the following dilemma. On the one hand, some criticisms are well crafted and persuasively supported, but do not directly question key tenets of Mäki's philosophical views. On the other hand, other criticisms target key tenets of Mäki's views, yet are not substantiated. This neither licenses unreflective acceptance of Mäki's arguments nor excludes that such arguments may be successfully challenged. Nonetheless, it suggests that the key tenets of Mäki's philosophy of economics are more impervious to criticism than some readers might conjecture. Moreover, it gives a reason to doubt that Mäki's followers will give up their sympathies because of the criticisms in this volume, at least in the form these criticisms are presented. Below I support my evaluation with a series of examples that respectively concern the notion of isolation, Mäki's MISS account, the interdisciplinary relationships between economics and other decision sciences, and commonsensible realism.

My first set of examples relate to the notion of *isolation* and its role in economic modelling. In his article, Hindriks raises some pertinent concerns regarding Musgrave's and Mäki's strategies for vindicating a realist interpretation of economic theories. Even so, he does not provide compelling reasons in support of his favoured strategies. For instance, the alleged fact that notions such as causation and mechanism can be explicated in terms of counterfactuals (57) does not imply that the 'truth-of-the-counterfactual strategy' is successful. Moreover, his claim (60) that

Mäki fails to clarify how non-negligible falsehoods can be reconciled with the truth of theories does not do full justice to the conceptual subtleties in Mäki's work on this issue. Similarly, Grüne-Yanoff puts forward insightful distinctions between various notions of isolation in Mäki's articles. At the same time, his remarks on the different functions of these notions are treated too cursorily to license wide-ranging conclusions regarding purported conceptual discontinuities in Mäki's writings (106). Finally, Vromen convincingly illustrates that modelling disputes in economics frequently concern not just what explanatory variables should be included into models, but also what interactions hold between these variables and how those variables are to be interpreted. Still, this plausible thesis does not bear against Mäki's account of modelling. For Mäki's insistence on the importance of isolation does not commit him to maintain that 'scientific disputes are largely, if not solely, about the issue of which explanatory items [. . .] to isolate' (130).

With regard to Mäki's *MISS account*, Niiniluoto persuasively elucidates how Mäki's considerations cover both similarity models and analogical models (78). However, more could have been said as to how important this strength is when it comes to providing a comprehensive evaluation of the cogency of Mäki's account. Analogous remarks apply to Hausman's comparison of Mäki's MISS account and his own account of theoretical economic models. To be sure, Hausman puts forward instructive remarks (88) concerning the relative strengths and weaknesses of these two accounts. Moreover, he makes some pertinent observations (90) regarding the parallels Mäki draws between models and experiments. Yet, these claims could have been supplemented with a more detailed evaluation of the overall merits of Hausman's and Mäki's accounts.

Concerning the *interdisciplinary relationships* between economics and other decision sciences, one might agree with Davis that a literal interpretation of Mäki's criteria for evaluating disciplinary imperialism could yield implausibly restrictive verdicts. This, however, does not exclude that a more nuanced reading of Mäki's criteria may avoid this pitfall. In particular, it does not imply that Mäki's strategy of evaluating disciplinary imperialism by specifying constraints on theoretical extensions is itself problematic (216). Similarly, Ross sharply identifies several differences between his own and Mäki's characterizations of the domain of economics. Even so, it is one thing to say that there are interesting methodological questions about the relationship between economics and cognate disciplines that Mäki does not adequately address. It is quite another thing to maintain that his account leads us to ask 'the wrong questions' (199) about such relationship. In this respect, Ross' claim (183) that Mäki's version of realism does not help us appreciate the potential value of neuroeconomic research for economics will not strike many readers as particularly charitable.

As to *commonsensible realism*, Hands' claims that revealed preference theory 'is not grounded in commonsensibles' and 'seems to be at odds with Mäki's realist framework' (170) invite two Mäkian rejoinders. Firstly, a commonsensible realist may doubt that Hands' critical remarks apply to other theoretical frameworks in economics besides revealed preference theory. And secondly, Mäki himself acknowledges that common-sense conceptualizations of preferences differ from the notion of preference implicit in revealed preference theory. In this respect, it remains to be seen whether the involved differences suffice to call commonsensible realism into question. What about Guala's challenge to commonsensible realism? Guala's challenge is nicely encapsulated in the following dilemma (151). Commonsensible realists can either interpret rational choice theory along behaviourist lines or give it a 'thick' psychological interpretation. Regrettably, following the first route would force them to deny that preferences have a causal role in the explanation of action, thereby severing rational choice theory from neuro-psychological research. The second route, instead, would allow commonsensible realists to preserve the continuity with neuro-psychology, but only at the cost of introducing unobservables in economics. This, in turn, would compel them to acknowledge that economists face the traditional problems of scientific realism. I am not persuaded that this dilemma is inescapable, or at least that Guala shows it to be inescapable. In particular, I doubt that the behaviourist and 'thick' psychological interpretations mentioned by Guala exhaust the set of plausible interpretations of rational choice theory. Still, Guala's provocative exposition will likely command an appreciative audience and encourage replies by the proponents of commonsensible realism.

In summary, *Economics for Real* achieves its stated aim to provide a systematic and critical examination of Mäki's philosophy of economics well. The book's articles combine great accessibility and philosophical sophistication, and most of them are worth reading even on their own. The contributors offer detailed insights concerning Mäki's positions and supplement their critical remarks with valuable constructive exploration. Moreover, they address several issues at the frontier of contemporary philosophy of economics and philosophy of science more generally. The volume will be of interest not only to philosophers of economics, but also to economic modellers and practitioners eager to explore the methodological foundations of their discipline. It is essential reading for anyone interested in economic modelling and the vast array of philosophical problems surrounding it.

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The Tyranny of Utility: Behavioral Social Science and the Rise of Paternalism, Gilles Saint-Paul. Princeton University Press, 2001, vii + 163 pages.

Gilles Saint-Paul's *Tyranny of Utility* offers a criticism of the current trend to treat behavioural economics as justifying ever-expanding government intrusion in the lives of private citizens. Although Saint-Paul tends to be uncharitable to his paternalist opponents and to confuse important ethical distinctions between types of policy justifications, the overall call to evaluate more carefully the findings of behaviour economics, as well as to examine more closely what inferences such findings justify regarding the role of the government, is certainly welcome at this point in the philosophical debate.

Saint-Paul begins with an historical examination of political institutions and the conceptions of man on which such institutions relied. Specifically, Saint-Paul considers the conception of man as a rational, unitary individual. Indeed, the historical focus on freedom and personal responsibility requires such a conception. However, as Saint-Paul notes, both the conception of man as rational and the conception of man as unitary have come under fire from philosophers and social scientists. Moreover, behavioural economists now reject the traditional economic view that whatever decision an individual makes reveals his/her actual preferences, and they have shifted their attention to the real rather than the ideal man.

Unfortunately, as Saint-Paul notes, many have used the findings of behavioural economics as justification for expanding the role of the government. The classic example in the literature is that of mandatory pension savings. On a traditional economics view, 'under-saving' is not irrational; instead, it indicates that the individual prefers consumption now to consumption later. If, however, we abandon the view that the self is unitary and consistent over time and instead embrace the conception of the individual as multiple incarnations (or selves) within the same body, we can reinterpret the phenomenon of under-saving as one incarnation consuming now and thereby reducing another incarnation's consumption in the future. Thus, the argument on behalf of government intervention