

### Concluding remarks

*The Microeconomics of Complex Economies* by Wolfram Elsner, Torsten Heinrich and Henning Schwardt is a very well edited, versatile and powerful textbook. It delivers what it ambitiously promises: a pluralist introduction into microeconomics with a focus on social complexity. It can be used in any microeconomic course but it may be analytically too advanced to become a standard textbook. It provides plentiful of exercises for lecturers and students as well as helpful boxes illustrating topical real-world problems. EHS have delivered a grand and unique microeconomic pluralist textbook that deserves highest attention in the economic community.

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### Economic methodology into the practice of economics

**Economic methodology: a historical introduction**, by Harro Maas, translated by Liz Waters, London, New York, Routledge, 2014, xiv+188 pp., £29.99 (paperback), ISBN 978-0-415-85899-1

In a paper delivered to the 2000 INEM Conference, Roger Backhouse put forth an important claim: economic methodology should attend to the methodological agenda set by practising economists if it is to understand what economists do.<sup>1</sup> Practising economists' daily activities and their concerns should be given full consideration. Although philosophically informed – actually an interdisciplinary endeavour, drawing upon contributions from philosophy, history and sciences studies – economic methodology, as Backhouse argued, is 'caught' between the competing demands of philosophy and economics.

However, apart from a few commendable exceptions (e.g. Boumans & Davis, 2010, Chapter 2; Dow, 2002; Fox, 1997), textbooks in economic methodology are in general mostly philosophically oriented. The issues they raise are, to a great extent, far from economists' and economics students' concerns and unfortunately do not usually engage them in the conversation. Economists' practices, the methods and techniques of inquiry they use, the issues that most interest them, are largely set aside.

This is not the case with Harro Maas's *Economic Methodology: A Historical Introduction*. This new textbook is, in this respect, an excellent addition to the literature. 'Economists in action' – their practices and their discussions – are here given centre stage. Furthermore, it presents a very innovative, historical approach to economic methodology. Through a judiciously selected series of episodes in the history of economics, the reader is led on a journey through the methods of economics since the controversies on the proper method of political economy in the first half of the nineteenth century to the present dominance of the modelling approach to economics. In a lively, engaging style, the author offers a detailed, skilful, clear and well-written narrative of how statistics, mathematics and models became the mainstream instruments in economic analysis and explores relevant methodological issues involved in model-building. As Van den Berg puts it (on the book's back cover), this book 'is not about what economists say they do, or what methodologists say they should do, but what they do'. We might reasonably call this, drawing inspiration from Heilbroner (2000), a *worldly* methodology. The author, following Hans-Jörg Rheinberger, calls it '*historical epistemology*' – an empirical–historical approach to the theory of knowledge focused on what scientists *actually* do, on 'the historical conditions *under* which, and the means *with* which, things are made into objects of knowledge'. The central focus – the object to be known – becomes 'the process of generating scientific knowledge and the ways in which it is initiated and maintained' under historically variable and evolving conditions. It is an approach where the philosophy of science becomes *historicised* and the history of science *epistemologised* (Rheinberger, 2010, pp. 2–4). Maas's book is an outstanding application of this approach to economic methodology.

The book develops over ten chapters (the introduction plus nine chapters, the last one of a conclusive nature) and includes at the end a helpful guide to 'further readings'. The introduction opens with a very stimulating synopsis of the film *Blow-Up* (1966) by Michelangelo Antonioni and sets the stage for the drama that Maas proposes to articulate. The message is clear from the very beginning (and the description of the film serves this purpose): the increasing resemblance of the economist's research strategies, ever more based on (mathematical) model-building, with those used in the natural sciences. The economist, he intends to show, has changed his character – his *persona* – over time from a politically engaged public intellectual acting at stage front, based on a discursive approach, to an expert (a technocrat) acting behind the scenes, building and thinking with models, like the young photographer in the film who was trying, with all the available instruments at his disposal in the lab, to solve his puzzling experience as a likely witness to a murder. The introduction also serves the purpose of highlighting the nature of the approach to the methodology of economics adopted in the book.

In Chapter 2, the reader revisits the early nineteenth-century's debates about whether political economy should be pursued as an inductive or deductive science. Attention goes, in particular, to John Stuart Mill's views on method and their intellectual and political origins in the context of the Cambridge and Oxford debates of the time. In doing this, Maas suggests the terrain on which he is going to ground his methodological discussions in the remainder of the book: the history of successive

generations of economists attempting to deal with the foundational issues raised in Mill's essay 'On the definition of Political Economy': the complexity of economic reality, the issue of the specificity of economics as a science and the role of the economist in society.

In Chapter 3, the increasing use of statistics in economics between the 1870s and the 1930s and the first steps of the gradual transformation of economics into a mathematical science are examined. More specifically, the author scrutinises the works of Cairnes, Jevons and Robbins (among many others). A contrast is made between the 'statistician' and the deductive-analytical approach of the Austrians, and attention is given to the changes that happened in this period in the method of economics as well as in the practices and in the *persona* of the economist. The most relevant thread of such changes, the author claims, is the conversion of the political economist from a sort of 'detective and playwright' into an 'instrument maker' – 'a scientist who develops instruments for use in discovering the secrets hidden within statistical data' (p. 37).

In Chapter 4, we follow the author in a well-informed travel guide into the business cycle research carried out in the Netherlands in the 1920s and 1930s and see the transition to a new way of pursuing economic research grounded on (causal) conjecture-based, large-scale empirical representations of the economy shown to be compatible with the available data. The economist becomes an 'umpire and mediator', acting like an engineer, showing the likely consequences of intended policies and indicating the best means to achieve a given goal. The hero is now Jan Tinbergen, although the emphasis goes, instead, to the idea, underlined in Chapter 5, of the economic researcher as just a member of a large team working on a collective venture.

In Chapter 5, Maas revisits Keynes's much discussed view of econometrics and his criticism of Tinbergen. The discussion is cast in terms of the 'dramatist' (Keynes) against the 'model-builder' (Tinbergen), a 'turf war' which, according to the author, was 'firmly settled in favour of the model-builders' (p. 61). The following quotation summarises well the judgement on Keynes expressed in the chapter: 'to the post-war way of thinking, [Keynes] was no longer an economist. His working method was diametrically opposed to that of the scientist, who derived information from statistical data using the toolkit of the modern econometrician. (...) Keynes produced only plausible stories, rather than testable hypotheses. Keynes' work might still be of value, but only as a theoretical or literary exercise. (...) A literary virtuoso could no longer be regarded as a scientist.' (pp. 71–72)

Chapters 6–9 guide the reader through a remarkable journey into the methodology of model-building in economics. We find here a proficient analysis of the 'as if' instrumental methodology of Milton Friedman and of his critique of the Cowles Commission approach based on the development of large-scale structural models (Chapter 6) of mathematical 'thought experiments' as practised by Samuelson, i.e. conceptual explorations intended to test the credibility of significant intuitions held by economists – to provide unexpected insights into the structure of reality, not predictions or representations of real economies (Chapter 7) of experimentation in economics based on replication of markets in a laboratory (Chapter 8) and of 'what if' simulation with models, i.e. interventions in the 'reality' of the models – virtual experiments on models – to see how the model responds to various 'states of the world' or policy measures (Chapter 9). The stories told in these four chapters serve the purpose of discussing issues such as: What is the nature and purpose of modelling? How important is the realism of a model's assumptions? What is the value of a model and where does its power lie? How feasible is it to replicate markets in a laboratory? What is the usefulness of

models and computer simulations in determining possible courses of action in response to changes in the world or in policy measures? How to assess the quality of a model?

On the way to answering these issues, we find the inevitable historical character of the ‘rules of the game’. In a short final chapter (Chapter 10), Maas summarises his views on the significance and power of models and on the now dominant role of the economist. In his words: ‘By far the most important instrument developed by economists is the ‘model’, a set of equations that amount to description in miniature of an entire economy. (...) Although admittedly a simplification of the world, a model is at least able not just to reflect complex processes but – if only to a certain level – to enable us to manipulate them’ (p. 172). And: ‘By using models, the economist began to impose impersonal rules of the game on society. (...) Instead of being a participant in the public debate, the economist is more like an umpire, seeming to stand above the political parties. (...) The economist’s own verdict is now hidden within what looks like an objective representation of an economy.’ Yet, as Maas notes, ‘his judgement is no less present in his research instruments and the results they are used to produce.’ (pp. 173–174).

The key message of the book is undoubtedly that the actual practices of economists have significantly changed over time involving a change in the methods of inquiry, in the self-perception of economists as scientists and in their role. According to the author, the entire process boils down to a progressive transformation of economics into a science of (mathematical) model-building and the transformation of the economist into an expert (a technocrat) acting as an ‘umpire’, working behind the scenes, usually integrated in a collective team.

This is indeed a valuable piece of work. The reader will find in this book an impressive amount of information and many stimulating ideas on the practice and methods of economics, on how these have been changing over time and on the issues this raises. Yet, some absences and some questionable views must also be highlighted. The author’s optimistic view of the capacity of models to reflect complex processes in economics (and even manipulate them) and his relative disregard for the discursive approach to economics are, in my view, the most significant and disputable.

Maas claims it is not his intention ‘to offer a linear history with the current situation as its triumphant culmination, although clearly an approach using mathematical models dominates economics as currently practised’ (p. 5). Yet, one cannot but wonder whether this book is really a *comprehensive* introduction to economic methodology – as the author sets out to present it – or rather an introduction to the *methodology of model-building* in economics (and, even in such a case, a somewhat partial one). Some relevant discussions that have taken place throughout the history of economics (including in the recent past) and in economic methodology<sup>2</sup> are conspicuous by their absence in the book, although, in my view, a broad historical introduction to the methodology of economics cannot evade them.

For instance, no mention is made of issues such as the following (or they are left largely unaddressed notwithstanding their obvious bearing): (i) the social ontological foundations of economic phenomena (e.g. human agency, intentionality, the agency/structure interaction, uncertainty) and how they condition the worth of the various methods and procedures of economics (e.g. of mathematical models) (ii) the commonality vs. discontinuity between the natural and the social sciences and the nature of knowledge in economics; (iii) the collapse of the fact-value dichotomy and its implications for the positive-normative distinction in economics (obviously relevant for the discussion of the tension between science and politics, emphasised by the author); and, finally, (iv) the quality/quantity tension in economics.

This is neither the time nor the place to develop all these aspects. Let me focus on the latter point. It is now common to think of economics as a formal, mathematical science, and the dominant trend clearly favours the technical, mostly quantitative dimension of economics. Maas is right; ‘model or die’ has become the all-constraining dictum in economics, the exclusionary basis for keeping barbarians away from the gates (‘even if it adds nothing to your verbal analysis’ (Lipsey, 2001, p. 184)). But the issue is far from settled. The overwhelming emphasis on the adoption of mathematics as the almost exclusively legitimate language and mode of reasoning in economics has always stirred up debate and dissent (see Hodgson, 2012). This is the case of several non-mainstream schools of thought (Institutionalists, Austrians, many Post Keynesians, etc.), but important reservations about the use of mathematics and mathematical modelling in economics may also be found in prominent representatives of the economics profession throughout its history (and not only in pre-World War II economics). J. M. Keynes is a typical example, but many others can be added: Marshall, Coase, Hayek, Hirschman, Ostrom; the list could go on. Certainly, all these names (exception made of the latter two, perhaps) may be considered somewhat ‘old-fashioned economists’ now, but their reservations should not be set aside without due consideration. Keynes, to return to the main target of Maas’s criticism, noted that ‘to convert a model into a quantitative formula is [in economics] to destroy its usefulness as an instrument of thought’ and argued against ‘[t]he pseudo-analogy with the physical sciences’ (Keynes, 1973, C.W., XIV, pp. 299–300). On various occasions, he emphasised that the applicability of mathematical reasoning in economics was a matter of logic – ordinary or ‘human’ logic – and that ‘qualitative logical analysis (i) *precedes* quantitative or mathematical analysis, and (ii) *determines the scope* of its application’ (O’Donnell, 1990, p. 35).

The truth is that modelling does not dispense with an interpretative framework (Spiegler, 2006; Spiegler & Milberg, 2009). Maas recognises the unavoidable need for judgement, but his emphasis on the technical side of model-building leads him to divert attention away from the key issues of conceptualisation, theorising and interpretation. As Hodgson recently noted: ‘Models have to be put in their place alongside conceptual, philosophical, historical and other considerations. We need to be able to criticise assumptions and discriminate between models. Given that decisive empirical tests are rarely possible, other factors have to be taken into account when evaluating different models. *Broadly-trained judgement is vital*. Its role is enhanced precisely because of the complexity of the phenomena at hand (Hodgson, 2013, p. 17, italic added)’. A discursive/interpretative element is always present in economics (even if not always acknowledged) and is unavoidable. On all these matters, Maas provides us with no more than largely ungrounded statements such as: ‘the turf wars between Keynes and Tinbergen (...) were firmly settled in favour of the model-builders’ (p. 61) and Samuelson’s *Foundations of Economic Analysis* ‘marked a definitive end to the literary, discursive approach to economics’ (p. 101). These clearly demanded further elaboration. The author’s discussion of Keynes is, in this regard, disappointingly superficial and biased.

No doubt, a persistent quality/quantity tension has troubled economics almost from its early stages. It is true that, in general, economics tends to be regarded as the domain of measurement and quantification – ‘the domain of the ‘universal equivalent’ (currency)’, to use the words of Guesnerie (1997) –, a science which can only be mathematical. It is thus natural that economists have consistently attempted to formalise their theories mathematically and build economics on the standards of rigour typical of the

‘harder’ physical sciences. However, against Jevons’s well-known claim that economics ‘must be a mathematical science (...) simply because it deals with quantities’, economics deals with quantities only on the surface. Numbers are in economics ‘operational numbers’ (Gillies, 2004), not estimates of real quantities (as happens in physics). The conventions of quantification need to be examined. Moreover, as Hodgson and nine other British scholars claimed in a ‘Letter to the Queen’, dated August 2009, although modelling is important, ‘a broader range of models and techniques governed by a far greater respect for substance, and much more attention to historical, institutional, psychological and other highly relevant factors’ is needed (see Hodgson, 2012, p. 568).

Unfortunately, the hegemony of formalism in economics and a dualistic view of the appropriateness of mathematical vs. verbal methods have left little space for any approach which attempts to go beyond a reductionist debate in terms of either/or, of acceptance vs. rejection of formalist methods.

All methods have ontological presuppositions or preconditions, and controversies over their appropriateness tend to reflect conflicting conceptions of the real world and of the nature of the subject-matter of study. Instead of a settled issue, as Maas suggests in his book, the question of how to deal with the qualitative dimension of its object of study remains an open issue in economics today. It is also true that an extensive literature critically examining the philosophical foundations of formalism in economics is available.<sup>3</sup> Unfortunately, this book largely ignores it.

All these reservations notwithstanding, there is no doubt that Harro Maas’s *Economic Methodology: A Historical Introduction* is a very important, innovative and scholarly written introduction to the methodology of economics. In putting the practices of economists at its heart it may – and should – attract a wide readership. Students of the history of economic thought and economic methodology will indeed find in this book much food for thought. I can only strongly recommend its reading.

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### Notes

1. Roger Backhouse, ‘Serving Two Masters: Economic Methodology Between Philosophy and Practice’, available at <http://www.helsinki.fi/jarj/inem/announce/back.pdf>.
2. Some of them addressed in books published in the Routledge’s *Economics as Social Theory* series such as this one.
3. See the rich (and diverse) collection of 46 articles put together in Hodgson (2012), namely, just to mention a few among the many relevant works Hodgson selected, the articles originally published in the 108 (November, 1998) issue of the *Economic Journal* on the ‘Controversy on Formalism in Economics’ (already a classic), the paper by Chick and Dow (2001), and the more recent articles included in Part IV, ‘Mathematical Economics and the Great Crash of 2008’. See also Loasby (2003), key reading, published in this journal; the chapters on economic modelling collected in Mäki (2002) and, on interpretative reasoning, Boettke (1990).

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