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**Change and Continuity in Economic Methodology  
and Philosophy of Economics**

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***Change and Continuity in  
Economic Methodology and Philosophy of Economics<sup>1</sup>***

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*Abstract:* This paper provides my reflections on the state of economic methodology and philosophy of economics as of the beginning of 2020 following the end a fifteen year co-editorship of the *Journal of Economic Methodology* with Wade Hands. It looks at how economic methodology and philosophy of economics, as a meta-field type of research, has changed since it emerged as a distinct subfield in economics in the 1980s. Using an evolution of technology analysis, it distinguishes two different possible scenarios for the field's future according to environmental factors operating upon it and how specialization in research may affect both it and economics, and then makes a crossdisciplinarity argument for its further development as a diverse, pluralistic domain of research.

*Keywords:* economic methodology, philosophy of economics, meta-field, technology evolution, specialization, crossdisciplinarity, pluralism

*JEL codes:* B41, B20

*1. Introduction: Whither methodology and philosophy of economics?*

This paper provides my reflections on the state of economic methodology as of 2020 following the end of my co-editorship with Wade Hands of the *Journal of Economic Methodology* that began in 2005 and ended in January 2020. It is in some respects a companion piece to Hands' own reflections (or 'post-Reflection' reflections) paper a year ago in this journal (Hands, 2019) because it draws on our shared experience editing the journal. Hands also sees his paper as a companion piece to Dan Hausman's retrospective paper on philosophy of economics published in this journal a year earlier (Hausman, 2018), and so my paper at one further remove can be seen as a further contribution to an on-going discussion regarding the current state and possible future of economic methodology and philosophy of economics. Though of course we all differ in our views, several things seem to link our different contributions.

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<sup>1</sup> I am grateful to Roger Backhouse, Gilles Campagnolo, Ricardo Crespo, Maxime Desmarais-Tremblay, Zohreh Emami, Wade Hands, Emmanuel Picavet, Andrej Svorencik and the Editorial Board of this journal for helpful comments on a previous version of this paper.

First, they are forward-looking and backward-looking. We all try to understand the state of economic methodology and philosophy of economics in terms of where it is going by reflecting upon its history and what it has been. The underlying assumption we share is that a history that exhibits direction tells us something about its destination.

Second, we all largely agree that there is considerable change and even discontinuity in the field over time. What people thought was important several decades ago – the Kuhnian-Popperian-Lakatosian ‘demarcationist’ normative ‘theory appraisal’ approach or methodology with a big ‘M’ – no longer is, or at most not very important.

Third, whereas in the past there was considerable agreement among methodologists and philosophers of economics regarding what the main issues and subjects of investigation were, now the situation is quite the opposite. There are many currents in the field today, and few in the field believe we can easily say what links them, what subjects are foundational, and what the future holds for methodology and philosophy of economics.

These three features, and especially the third, motivated a special (soon to appear) issue of the *Journal of Economic Methodology* that Hands and I have organized made up of a number of short papers on the state of the field as a close to our editorship. The model for this special issue was another special issue in the journal twenty years earlier with the same project titled, “Millennium Symposium: The past, present and future of economic methodology.” At that time, Mark Blaug was the Executive Editor, Roger Backhouse, Kevin Hoover, and Uskali Mäki were Editors, and Matthias Klaes was Managing Editor of the *Journal*.

Hands and I thought it would be interesting if the contributions to our issue could be compared with the contributions to the earlier issue. That might tell us whether greater clarity about the nature of the field had developed in the last two decades. Indeed, to make the comparison between our issue and that previous one all the more clear, we asked essentially the same questions (only very modestly revised and updated) of our contributors that the previous editors had asked of theirs:

1. What has been achieved in economic methodology over the past two decades?
2. What are the most promising developments in the field?
3. How should economic methodology to be of greater use to practicing economists?
4. Should developments in other disciplines play a great role in economic methodology?
5. What sort of relations between methodology and other disciplines ought there be?
6. What developments in economists’ practices ought methodologists know more about?
7. What balance should there be between explaining economics and appraising it?

Our expectation was that that both sets of contributors would agree about the second point above – that the Kuhnian-Popperian-Lakatosian ‘demarcationist’ normative ‘theory appraisal’ approach was still a feature of the past and continued to have little place in economic methodology today. Partly because of this, we also imagined that the first issue – that historical backward-looking reflection is a means to a forward-looking one – might seem less important to contributors today

than twenty years ago. As the field's past becomes more distant, and people who have not lived it increasingly come to dominate the field, that particular past has less weight. I also wonder myself whether this might mean that the far distant past of the field, from J.S. Mill through to Lionel Robbins, might be of less interest today than it arguably was at the time of the Millennium issue of the *Journal*. More on all this below.

However, what Hands and I believed most strongly we would see from the contributors to the new symposium was that the third matter would even more strongly reflect how contributors would see the field today than twenty years ago. We felt this based on our fifteen year experience as editors of the *Journal* over which time there were fewer and fewer papers of a synthetic nature that sought to take stock of the field and more and more papers that focused on new initiatives without emphasizing how they fit into past research.

In one respect, we may have encouraged our contributors in this regard because we asked them to write on what they believed were important 'new developments' in the field, both to acquaint our readers with innovations they might be especially familiar with and to give our contributors relatively free reign. But this emphasis does not exclude more backward-looking, stock-taking types of papers, and indeed some take reflection as their jumping off point. I recall, then, that when we conceived of this special issue we asked ourselves whether there recently existed new major overviews of the field comparable to Hands' own *Reflections* book (2001), Marcel Boumans and my introductory text (2010), and Julian Reiss's more recent book (2013). Our sense was writing such books today would be a daunting task and perhaps a bit of a gamble! This is not to say that such books are not in process – I have heard of several.

To be clear, then, Hands and I, as no doubt others, strongly welcome papers that emphasize innovation and new developments in the field. Any field undergoes deepening and widening as it develops, and for those in it this is exciting and interesting. At the same time, however, a field's development should arguably build upon its past rather than simply abandon it, or it risks becoming so diverse and possibly fragmented that it ceases to be an identifiable single field of research. What is the balance, then, between continuity and change? To address the question, the next section offers an evolutionary explanation of how fields of research may change over time, treating research fields as 'technologies' of investigation. In the section following, I then use this framework to describe how economic methodology has actually changed as a research field in its short history since it emerged as a distinct subfield in economics in the 1980s. In the sections following, I then speculate about how the field might continue to develop in the future.

## *2. Evolution of fields of research as evolution of technologies*

The advantage, then, of examining the field of economic methodology from an evolutionary perspective is that it makes the balance between continuity and change in the field central to our understanding of it. Rather than trying to define the field in a single, 'essentialist' way apart from the circumstances under which it has become a recognizable field of investigation, an evolutionary approach allows us to determine what the field is and may become according to how it has developed and may further develop.

The field's emergence in the 1980s, then, is my starting point because, though its subject matter, the nature and practice of economic science, had been clearly recognized at least since J.S. Mill more than a century earlier, and though there were important debates about methodological issues in the interwar period, in the 1980s the field rather suddenly displayed a relatively high level of new activity addressing new questions and topics, and came to be seen as an independent area of research (though one first thought to be part of the history of economics). This development, then, constituted an important measure of its success as a 'new' type of investigation, and the volume of activity it involved created an expandable base for further research on the issues and topics it could investigate, which in turn then made possible additional new issues and topics of research in an evolutionary way.

Suppose, then, we take sciences and research fields to be kinds of technologies – technologies of investigation. Just as technologies are explanations of how certain things work, so sciences and research fields are explanations of how certain kinds of thinking about the world work. Brian Arthur, the complexity theorist, then, has nicely explained in a non-Darwinian way how technologies evolve, and this provides us a way to think about how sciences and research fields evolve as special kinds of technologies (Arthur, 2009; cf. Davis, 2019).

Consider first how biological evolution understood in a Darwinian way is a relatively constrained sort of process in comparison with the evolution of technologies. A new type of animal or plant must always be closely related to its biological antecedents, since evolution proceeds through tight pillars of genetic inheritance. In contrast, the evolution of technologies, and ideas, proceeds, in effect, in a promiscuous sort of way since new 'organisms' can be the product of many different technology parents that need not be not very closely related to one another. On Arthur's view, then, technologies advance through new combinations of different sub-assembly technologies, or relatively independent, simpler technology units. These technology sub-assemblies are typically constructed with different goals and uses in mind, but when they are combined with other technology sub-assemblies in unanticipated ways, their goals and uses are re-purposed, and the new technologies they produce create new goals in regard to their desired uses. One of Arthur's best examples is the complex development of jet fighter aircraft capable of horizontal and vertical take-off (*Ibid.*, pp. 39ff). But our ordinary experience has many examples of how new technologies evolve out of combinations of older ones and produced in new goals for how to use them. A great one is our current mobile phone that combines many sub-assembly originally unrelated technology functions with the original communication sub-assembly technology function (cf. Mazzucato, 2013).

On this understanding of evolution, then, unlike in nature, the base upon which change builds is broader because inheritance patterns in technology change are less constrained and more open. The two main things that limits technology development are human imagination and the uses to which people determine technologies may be put. In any case, the larger base on which change builds allows for a more rapid expansion of the base on which it can occur in the future, so that, unlike in nature, technology development potentially grows in an exponential sort of way. What else limits this development, like in biological evolution, are the environmental conditions that influence what technologies are created and adopted and thus the direction this evolutionary process takes. I emphasize this latter factor in the following section.

Turning back to economic methodology as a technology of investigation, the base on which it has developed since the 1980s is the topics of investigation associated with it when it came to be seen as a distinct field of investigation. What Arthur's approach then tells us is that, as a technology rather than a natural species, economic methodology at that time was capable of rapid expansion and growth – a process that favors change over continuity. Consequently, the past success of economic methodology and its expanding base of activity should be expected to produce innovation and change – something we applaud – subject to the environmental conditions influencing its growth as a field. If, following Arthur, then, just as contemporary technology change often seems dizzying to us, perhaps we should expect change and development in economic methodology to be a bit overwhelming as well. Thus we might also say, in 'owl of Minerva' terms, that a greater speed of change means a greater delay in stock-taking and historical reflection. Accordingly, synthetic works telling what the field is that we currently miss are only yet to come, if with a growing lag.

I close this framing with a pertinent question it naturally raises. We know that technology change involves a continual replacement of past technologies with new technologies, and that past technologies can drop out of existence or be so changed in their form and uses that their new forms seem unrelated to their past ones. Think if the evolution of ground vehicles from horse-drawn to motorized. Might then methodology, if we take it to be a kind of technology, also be evolving in such a way as to become unrecognizable relative to how it once appeared, or even be evolving out of existence, just as have many now long-abandoned production and consumption technologies? In order to investigate this question, the next section tracks the development of the field since the 1980s as a particular type of investigative technology, namely one that functions as a 'meta'-field or a field of investigation derivative of another, economics.

### *3. Change in economic methodology as a 'meta'-field in relation to change in economics*

A meta-field is one that makes another field its object of investigation, which itself makes some domain in the world its object of investigation. This derivative character makes research in the 'meta'-field depend on how it defines and understands the status of the primary field as a discipline, but that in turn is influenced by how that discipline defines and understands itself. Further, since, disciplines can be compared to one another in regard to their similarities and the differences between them regarding what they are thought to be about, how a primary discipline defines and understands itself also reflects how it sees its subject of investigation as being similar to and different from how neighboring disciplines understand their subjects of investigation. At any point in time, then, a meta-field is consequently defined both by how the primary discipline it investigates defines itself and by how that discipline compares itself to its neighboring primary disciplines.

Moreover, how different disciplines compare with one another can be understood in terms of how close or distant their subjects of investigation are, or rather how close or distant their practitioners see them. Most would agree, for example, that the subjects of investigation of chemistry and economics are distant from one another, and that the subjects of investigation of psychology and economics less so. At the same time, many economists could regard what psychologists investigate as being as far removed from what they investigate as economics is to

what chemists investigate. Indeed, I suggest (perhaps with some exaggeration) that this was how most economists regarded psychology (and most other social science disciplines) until quite recently, namely, as very far removed in its concerns from those of economics. More recently, however, this view within economics has broken down in some degree, a change in thinking that corresponds to changes in how economists define their field and thus compare it to other social science fields. Below, I will explain this in connection with a movement away from Lionel Robbins' definition of economics toward Gary Becker's definition of economics.

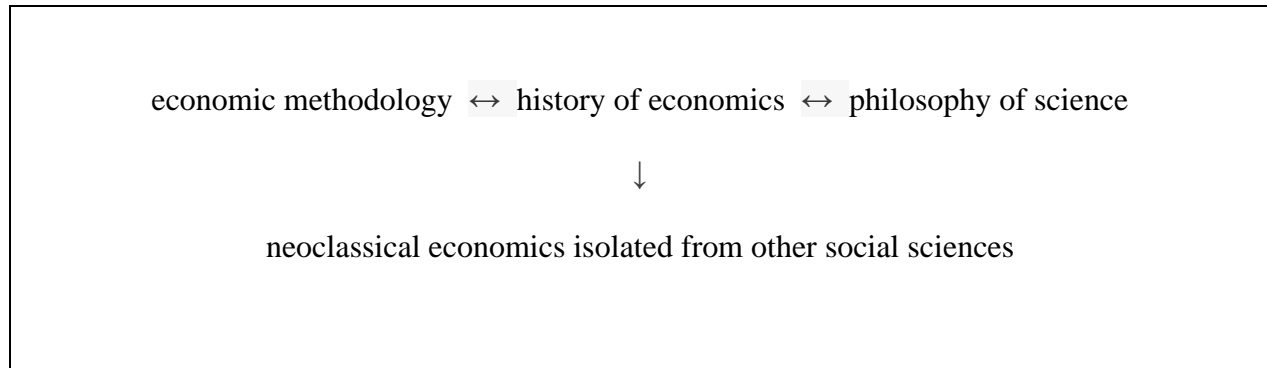
First, however, consider how this change could have affected the methodology of economics as a meta-field derivative of economics. The field became an active, successful domain of research, originally a field within the history of economic thought, in the early 1980s with the publication of influential books by Mark Blaug (1980) and Bruce Caldwell (1982). At this time, then, neoclassicism dominated economics, and the Blaug and Caldwell books plus much additional research at the time was concerned with the epistemological status of neoclassicism. Also, as Hands emphasizes (2019), this was when logical empiricist philosophy of science and the covering law model of explanation ceased to be much discussed by philosophers of science and methodologists. Thus, that neoclassicism dominated economics, and that Institutionalism, Keynesianism, and Marxism occupied a diminished role in the field, methodological thinking became preoccupied with broad theories of how whole approaches characterized economics. The Kuhnian-Popperian-Lakatosian normative 'theory appraisal' approaches were then used to evaluate the status of neoclassicism. Basically, that neoclassicism was the only game in town naturally suggested the 'theory appraisal' approach.

There was an interesting tension in this methodological approach that some methodologists worried risked making methodology appear irrelevant to economics – a perennial concern in the field since the 1980s. As many have noted, Popperian-Lakatosian ideas were not indigenous to economics or economic methodology, but were borrowed from the history and philosophy of science, in part because the field had yet to develop tools of analysis of its own. Popperian falsificationism could be used to appraise neoclassicism, as Blaug strongly argued, but the term was imposed on neoclassicism rather than indigenous to it. In contrast, most of the concepts used in neoclassical thinking, although some had origins outside economics, had been adapted to economics, and were in their new forms used there but not in other disciplines. This, I argue, was instrumental in determining both how economics defined itself and its high degree of distance most economists perceived distinguished it from other social science disciplines.

Robbins' famous scarce resources definition of economics (Robbins, 1935), then, uses concepts largely indigenous to and especially belong to economics. Robbins had a number of motivations in stating his definition, including a desire to distinguish economics from Classical economic thinking. Yet an effect of his definition, intended or not, was to strengthen economics' isolation from other social sciences. Economics would increasingly draw on quantitative methods used elsewhere in science, but this was still consistent with it being a closed social science field. However, economic methodology, in drawing on philosophy of science, was not committed to this conception, and thus found itself as a meta-field evaluating economics in ways that seemed to many economists to have little to do with what they saw as economics' distinctive social science identity. An active philosophy of science research program nonetheless still developed within economic methodology, because the philosophy of science tools methodologists were

investigating were powerful and insightful. So the community prospered, drawing on both the history of economics and the philosophy of science, despite its status within economics. In the 1980s, then, it was still called only economic methodology and not yet also philosophy of economics, because philosophical thinking was still largely limited to what came from the philosophy of (natural and physical) science. Figure 1 shows these meta-field relationships.

Figure 1: Economic methodology in the 1980s



Yet after methodology had stabilized itself as a particular type of meta-field, the object of its investigation changed its own identity as well as its relationship to other disciplines under the influence of the later Chicago School and Gary Becker's redefinition of economics. Becker asserted that what distinguishes economics is "not its subject matter but its approach," contrary to an isolation view of economics, and then claimed argued that the "economic approach is uniquely powerful because it can integrate a wide range of human behavior" (Becker, 1976, p. 5). That approach, or method, employed three principles – utility maximizing behavior, the equilibrium concept, and stable preferences. They did not necessarily apply only to economics despite their being developed by economists, and accordingly this method could potentially be generalized in explaining behavior in social science domains than in economics. This changed economics' relations to other social science disciplines since economists were in principle as capable of explaining their subject matters as were their own practitioners. Thus, neoclassicism's previous distancing of economics from the other social sciences gave way to Chicago School economic imperialism toward other disciplines (Davis, 2016).

Yet relatively soon thereafter, with this door now open, Daniel Kahneman and Amos Tversky (1979) inaugurated psychology's own ('reverse') imperialism toward economics, giving rise in the 1990s to behavioral economics as a new field within economics. If economics was purely a method of investigation independent of any particular subject matter, and that method distilled down to the theory of decision behavior, then psychology was equally free to offer explanations of topics that had traditionally belonged to exclusively to economics. But this was just the beginning of other disciplines' re-orientation toward economics. Game theory, imported originally from mathematics before the war's end but long ignored in the first decades after the



war, now colonized another new domain of decision theory. Later, following the lead of psychology, neuroscience created a new field of neuroeconomics. Accordingly, the last several decades are fairly characterized as a period in which economics acquired many interrelationships with other disciplines.

Economics' early post-war self-isolation from other disciplines was thus changed from both inside and outside of economics, and this change in economics' definition and its relationships to other disciplines changed economic methodology's meta-field objects of investigation. If in the 1980s economics was basically neoclassical economics, the effects of Becker's change in its definition and the Chicago's School's economics imperialism program inadvertently led to economics getting relabeled, appropriately ambiguously, as 'mainstream' rather than neoclassical economics. Indeed, as other-science contents increasingly came to play greater roles in economic explanations, the neoclassical label simply became historically outdated (Colander, 2000; Colander et al., 2004; Davis, 2006, 2008).

We see, then, two main developments in economic methodology around this time or reactions to the changing nature of economics that begin to reflect changes in its own object of investigation. First, there was a call to attend to and describe in a non-normative way economists' actual practices (Backhouse *et al.*, 1998; Hausman, 1992). If what economics was had become less clear, then the recommendation was to start at the ground level and ask what the phenomena it investigated were. Rather than grand theory appraisal, this was thus methodology on a smaller scale, or methodology with a small 'm' (McCloskey, 1985, 1994). Hands (2001, 2018) characterizes this shift as a turn to naturalism that made phenomena essentially as they are found in science the primary subject of investigation, and that set aside both evaluation of the theories that produced them as well as their explanation in terms of broad theories of science. While the history of economics, then, had played a smaller role in the Kuhnian-Popperian-Lakatosian methodology period, now it acquired new responsibilities and opportunities since it was in the best position to inventory and explain the variety of concepts and principles that economics employed. For a time, the relationship between economic methodology and the history of economics thus strengthened.

Second, recognizing that economics now increasingly interacted with other disciplines also justified widening the scope of philosophical reasoning brought to bear on it in a way that meant going beyond what the philosophy of science had to offer. Hands also gave clear statement of this in his *Reflections Without Rules* book that surveyed "recent work in economic methodology and the various developments within contemporary science theory that are relevant to it" (Hands, 2001, ix). Gilles Campagnolo has more recently also picked up on this in characterizing economic philosophy as "the study of fundamental values and principles of economic theories, the study of the structures, the meanings, the impact and the limits of rationality in action, ontology, methodology, and epistemology" (Campagnolo, 2019; see Hands, 2019).

I asserted at the end of the last section, then, that evolutionary change always takes place in particular environmental circumstances which influence the speed and direction of that change. Coinciding with the change in economics' definition and relationship to other disciplines, two institutional, environmental developments occurred around this time that had an important impact on economic methodology as a field. First, economics doctoral programs in the U.S.

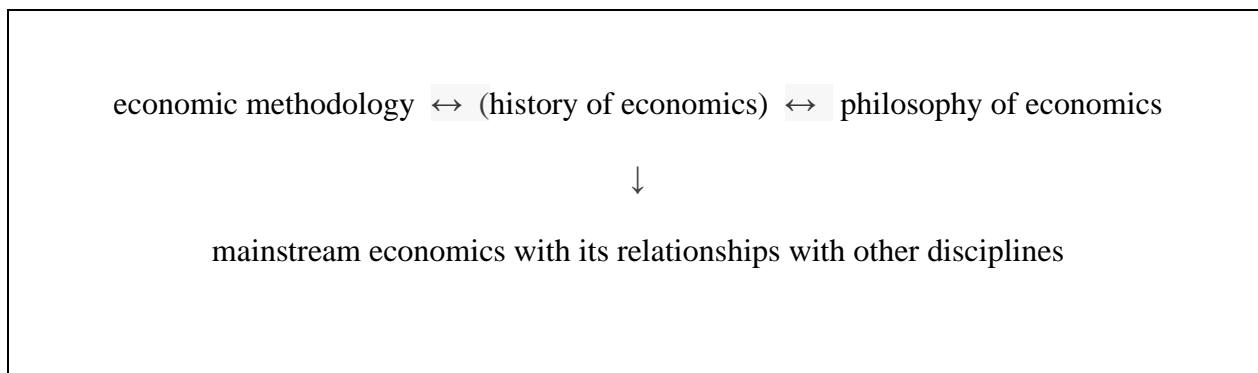
increased their emphasis on quantitative skills, and eliminated history of economics programs from which methodology had emerged in the 1980s from their curricula in one major university program after another. Second, also at this time there began to be more philosophy doctoral training in philosophy of economics, particularly outside the U.S. in Europe, which generally saw the philosophy of economics as a specialization within philosophy of science.

Together, these two environmental changes tended to reduce the weight given to the history of economics as a foundation for economic methodology, while tending to expand the repertoire of philosophical concepts used in methodological arguments. This weakened the link between history of economics reasoning and economic methodology, and increased both philosophical reasoning in the field and the weight given to the label philosophy of economics in characterizations of the field.

Given methodologists' emphasis at the time on economists' practices, the history of economics still played a role in the field, but with reduced training in it, this was less and less able to be sustained. Most historians and methodologists of economics devote most of their teaching time to standard courses in economics, and accordingly had an inside understanding of its intuitions and rationales. In contrast, people trained in philosophy programs mostly teach philosophy courses and rarely economics ones. Accordingly, their intuitions rather developed around fundamental ideas in philosophy. A hybrid case and exception is the field of science studies that aims to explain sciences in terms of their own historical and philosophical development.

Thus, to historically revise Figure 1, it seems that the history of economics connection should be given less emphasis, and the philosophy (and history) of science side of the field should basically be replaced simply by philosophy of economics. Figure 2 summarizes these new relationships from the 1990s to the present that appear to have transformed the field in such a way that it should now be labeled economic methodology/philosophy of economics, a meta-field with mainstream economics with its relationships to other disciplines as its object of investigation.

Figure 2: Economic methodology/philosophy of economics from the 1990s to the present



As a meta-field, then, economic methodology/philosophy of economics is now a more complex kind of investigation than was economic methodology in the 1980s. On the one hand, its object of investigation, economics with its altered definition of itself, has changed in terms of how it sees itself as similar to and different from other disciplines. On the other hand, as a meta-field type of discipline its own relationships to other meta-disciplines is more complicated than before. If in the 1980s economic methodology drew in a fairly instrumental way from only one particular current in philosophy and history of science, the growing importance to it of philosophy *per se* since the 1990s has brought a much larger array of philosophical concepts and theories into the field. Moreover, the relationship between these two sides of the field is somewhat unsettled, since there is a tension between a more historical, economics-specific type of investigation and one that grounds itself in more abstract philosophical concepts and theories.

If we return, then, to the *Journal of Economic Methodology* Millennium 2001 special issue, I believe we can see this broad shift in thinking already in process. While there is some discussion of the demarcationist normative theory appraisal approach, it is limited and most of the papers in the issue make pointed reference to new issues and speculate on where methodology is going. *JEM* was first published in 1994 (as a successor to *Methodus* which had begun in 1989), and so the process of change in the field I have described was already on-going. In their “Introduction” to the issue, the editors thus reasonably refrain from summarizing where methodology is going, and say their goal is to “open up new lines of inquiry” (Editors, 2001).

Consider also the evolution of *Economics and Philosophy*, which had begun earlier in 1985 under the editorship of Dan Hausman and Michael McPherson. In the early issues, economic methodologists and economists were the main contributors, but over time more and more papers have been from philosophers and the journal now draws research primarily from philosophers. So if *JEM* at the Millennium signals that change in the field is in full swing, *E&P* came to register this change more directly in terms of who was increasingly contributing to the field.

Let us return, then, to the issue of change and evolution of fields and disciplines with which this discussion began. The next section, then, attempts to extrapolate the recent past change in the field into the future.

#### *4. One possible future scenario*

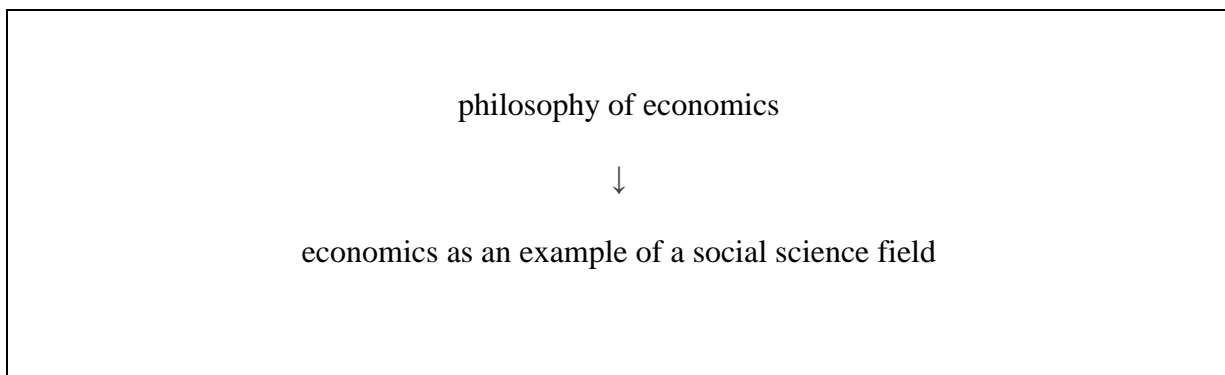
One possible scenario, then, emphasizes the environmental factors currently in place shaping the field. Thus, the change in doctoral training noted above seems likely to continue to diminish the meta-field’s origins in economics and history of economics, and expand its basis in philosophy. As fewer individuals in the field are trained in economics, and also teach it, and as a greater share are trained in philosophy, and teach it, the field is likely to increasingly frame economic reasoning in terms of philosophical reasoning. Economic reasoning is carried out at the level of economic concepts and theories, and implicitly or explicitly recognizes economics’ history. The reasoning in philosophy of economics is carried out at and framed by a higher level of abstraction, and implicitly or explicitly relies instead on the history of philosophy. In effect, the primary issues in philosophy of economics are philosophical whereas in economic methodology circa 1980 they are mostly economic.

Consider, for example, the concept of causality, an active area of research in philosophy of economics, especially since logical empiricism with its covering law model of explanation has been largely given up. In economics, interpretations of causal relationships are very much tied to visions of how the economy works. In contrast, in philosophy causality is investigated according to the many competing theories of causation *per se*. These theories are certainly relevant to how causality is understood in economics, but how they are understood in connection with it is more aimed at resolving debates over theories of causation than intervening in debates in economics.

Note that this shift in levels of abstraction may cut against economic methodology's 1990s call and recommendation to focus on economists' actual practices. For economic methodologists, this had meant moving from asking why economists employed certain types of explanations to asking how their explanations worked. Philosophy, I believe, is very much an investigation of why questions, and how questions serve at best to illustrate these deeper issues. Thus, at the time when methodology, having given up the normative theory appraisal approach, was forming a new consensus regarding the need for more practice-focused how investigations, philosophers of economics, who were gaining in influence in the field, were generally asking the more traditional why questions, not of the Kuhnian-Popperian-Lakatosian kind, but rather of the kind that Campagnolo describes.

Figure 3, then, summarizes how economic methodology/philosophy of economics in Figure 2 might evolve on this scenario. In the extreme, the economic methodology-history of economics link in Figure 2 is increasingly replaced by only a link to philosophy of economics, while the focus on mainstream economics in its relation to other social science disciplines is replaced by increasingly seeing economics as one example of a social science field and application of philosophical reasoning to it as a representative social science.

Figure 3: Philosophy of economics



This scenario, then, extrapolates current trends in the field under one particular set of environmental conditioning factors. In it, since economics has changed its identity, the identity

of the meta-field that investigates it has changed as well. Or alternatively, what Figure 3 might describe is how, from the perspective of its origins in the 1980s, economic methodology as a meta-field is on a path which will eventually cause it to cease to exist and be replaced by another meta-field, philosophy of economics, with related but ultimately different goals. As Arthur's analysis of technology shows, technologies not only evolve and change but in some cases cease to exist altogether when they are replaced by others. What determines this balance between continuity and change are the uses to which technologies are put. In this scenario, the uses to which the philosophy of economics is being put replace the uses to which the methodology of economics were put.

Note, however, that this extrapolation somewhat narrowly depends on how a particular set of technologies are influenced by a particular set of environmental developments that affect those technologies. Missing from this scheme, then, is any 'big picture' representation of how the overall technology landscape itself evolves, and how this might affect individual technologies and the particular ones I have focused upon. I return, then, to Arthur's general argument and what it implies about how entire technology landscapes evolve, and then ask how this might imply about the meta-field economic methodology/philosophy of economics.

### *5. Another possible future scenario*

In Arthur's analysis, technology change compared to natural change creates a relative abundance of new kinds of 'organisms' because it does not travel through the more constrained, pillar-based, within-species patterns of inheritance of the Darwinian model. It follows that the diversity of kinds of technologies should increase at a greater rate than the diversity of natural kinds. Thus, when we think about overall technology landscapes, we need to think about how diverse they are and what affects this. For Arthur, then, how diverse the overall technology landscape is at any time is determined by three things: the human creative process, the uses to which people determine technologies can be put, and the rate of investment in new technologies. The latter factor especially concerns a classic concept in economics: the division of labor and specialization.

In the history of economics, interest in the nature and role of the division of labor and specialization in economic systems goes back to Adam Smith famous thinking about the subject (Smith, 1776; 1937). But the speed of technology change has also made the concepts important to philosophy of science thinking, for example to Thomas Kuhn in his post-paradigm view of change in science (Kuhn, 2000). Generally, then, many thinkers have been ambivalent about the effects of specialization, seeing it on the one hand as both inevitable and beneficial aspect of economic development and on the other as risking producing an increasingly fragmented world, both socially and economically (Davis, 2019; Trautwein, 2017). I put these judgements aside, however, in an attempt to describe what increasing specialization might instead mean to the evolution of economic methodology/philosophy of economics technology landscape.

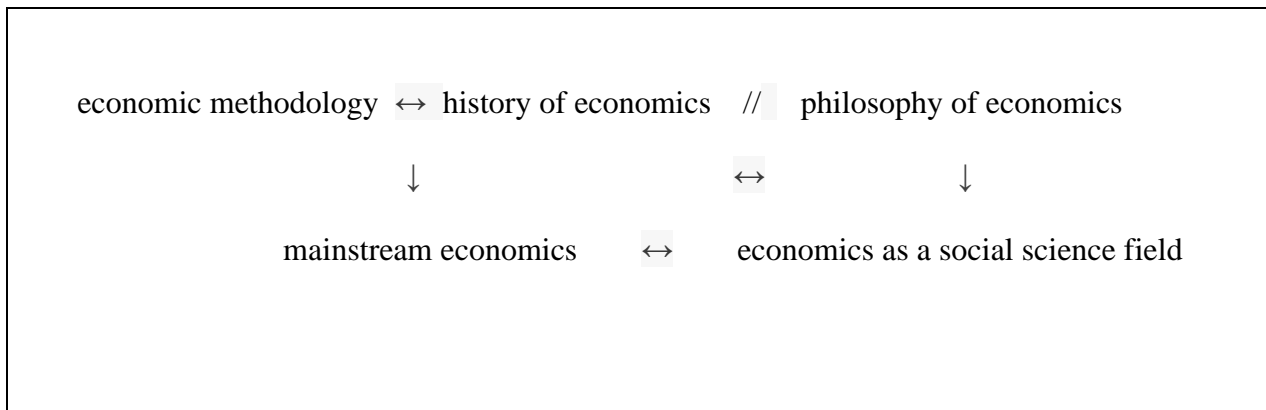
Thus, I take Smith's famous position regarding specialization as essentially correct. He argued that how far specialization proceeds depends on the extent of the market, or the extent of economic growth. The market in his view overcomes potential economic fragmentation effects

of specialization (though not necessarily the ill social fragmentation effects of specialization, for example, in the increasingly tedious character of work). Thus, combining Arthur’s view of technology evolution and Smith’s prediction that specialization always increases in systems that expand, we should expect the niches in which technologies operate to increase and sustain their development over time. As an overall technology landscape evolves, so the niches it creates expand as well, That is, for both Arthur and Smith the two levels of development interact and reinforce one another. To take a contemporary example, while some pharmaceuticals are widely used for many people and others are only used for particular groups of people, the development of both is arguably connected in the science behind their development.

Returning to the primary field/meta-field relationship, on this view, then, the overall technology landscape at issue is economics and how it evolves, and within it there exist multiple, evolving and interacting niche meta-fields. The argument above regarding Figure 3 emphasized environmental factors affecting these niche fields, but a specialization view of the overall landscape implies that niches, once created, are likely to be sustained as long as the overall landscape in which they operate continues to expand.

This is not inevitable. Historically, we know that some technologies are fully replaced by later ones. Whether, then, a niche and the specialized activity occurring within it is sustained depends on whether its uses continue to exist and investments in it continue to be made. More broadly, specialization is driven by the perceived value payoff delivered by an activity thought not to be delivered by others activities. Thus on this argument, Figure 4 projects an alternative scenario to Figure 3 in which diversity in meta-field investigations of economics is sustained as long as those investigations continue to be seen as useful and valuable, and as long as the primary field on which they depend itself continues to expand.

Figure 4: A landscape including multiple niche meta-fields



The ‘//’ symbol is meant to indicate that these two related meta-fields that are nonetheless different sorts of disciplines, while the ‘↔’ symbol beneath it is meant to indicate that they

nonetheless share an investigation based on having a single primary subject of investigation. The ↔ symbol between the two versions of the primary field in the bottom line accordingly indicates there is primary discipline or field, albeit with different labels or interpretations.

On the view that in growing systems specialization continues and tends to be sustained – the idea of a world of technologies increasingly characterized by diversity – Figure 4 is expandable to allow for the admission of additional future meta-fields beyond the two emphasized here. A strong candidate for future inclusion is the meta-field of economics and ethics that examines economics as a primary field from the perspective of ethics and moral philosophy rather than philosophy of science. That this meta-field has grown significantly in recent decades (Peil and van Staveren, 2009; White, 2019) seems to be a consequence of influential contributions from John Rawls, John Harsanyi, Amartya Sen, Ken Binmore, and others, but I postpone discussion of this and economics and ethics’ meta-field status and its relation to economic methodology/philosophy of economics to another occasion.

If Figure 3, then, is more complicated than Figure 2 for the reasons stated above, Figure 4 adds further complications associated with these meta-fields now being both communicating and non-communicating disciplines of investigation. There is a large literature on different kinds of disciplinary relationships between primary fields, but quite a bit less on different kinds of disciplinary relationships between meta-fields. I turn below in the next section of the paper to brief comments on what different sorts of disciplinary relationships these meta-fields might have.

#### 6. *Disciplinary relationships between economics meta-fields*

Though there are many ways in which relationships between different disciplines have been characterized and explained, I simply draw on the taxonomy of four forms developed by Jordi Cat in his the *Stanford Encyclopedia* “Unity of Science” article.

*Interdisciplinary* research or collaboration creates a new discipline or project, such as interfield research, often leaving the existence of the original ones intact. *Multidisciplinary* work involves the juxtaposition of the treatments and aims of the different disciplines involved in addressing a common problem. *Crossdisciplinary* work involves borrowing resources from one discipline to serve the aims of a project in another. *Transdisciplinary* work is a synthetic creation that encompasses work from different disciplines (Cat 2017: sect. 3.3).

Cat’s taxonomy allows us to order these four forms according to the degrees of integration of different disciplines they each involve. The least integrated case is interdisciplinarity, the most integrated case is transdisciplinarity, and the multidisciplinary and crossdisciplinarity cases are intermediate in different ways. Thus, transferring this scheme from primary fields to meta-fields, the issue Figure 4 raises is what the ‘//’ symbol involves. On the assumption that at the current time and likely in the future neither of Cat’s two extreme cases, the least and most integrated different discipline cases, do not characterize the relationship between economic methodology (history of economics) and philosophy of economics, their relationship is either one of multidisciplinary or crossdisciplinarity. Consider how they compare.

Multidisciplinarity is where our two meta-disciplines would juxtapose different “treatments and aims of the different [meta-]disciplines involved in addressing a common problem.”

Crossdisciplinarity is where our two meta-disciplines would behave instrumentally toward one another, “borrowing resources from one [meta-]discipline to serve the aims of a project in [the] other.” Thus, multidisciplinarity is the more integrated case, and crossdisciplinarity is the less integrated case. How, then, might we consequently explain the relationship between economic methodology (with history of economics) and philosophy of economics in the foreseeable future?

The instrumental crossdisciplinarity borrowing case already seems to characterize the two fields since people trained in each interact with each other personally, as co-authors, and in conferences, and, while they often publish in field-specific locations, they also publish in locations that draw people from both fields. This has indeed been one part of the mission that Hands and I have tried to maintain – to make the *Journal of Economic Methodology* a place for this sort of shared communication for researchers from different backgrounds.

The multidisciplinarity juxtaposition-common problem view is more difficult to project as a possible evolution of the current state of affairs because of researchers’ different kinds of doctoral training and the professional incentives they create. What might influence this is economics’ own future development. Becker’s redefinition of economics as decision theory juxtaposes different disciplines investigations to one another and created common problems. This then gave rise to a somewhat unified meta-field development, as represented in Figure 2, at least for important parts of economics. However, I argued above moving to Figure 3 that on one possible scenario this state of affairs could break down as the philosophy of economics increasingly supplanted economic methodology. In effect, economics becoming decision theory, combined with environmental changes in doctoral training, seems to shift the meta-field landscape toward philosophy of economics.

Yet it seems it is unrealistic to think that Becker’s changed view of economics will become a settled view of economics on into the future. The economics-psychology connection it fostered has certainly been transformative for economics, but there has also been a host of additional other-science influences operating on economics – experimentalism, complexity theory, institutionalism – that raise questions about how economists and others may define the field in the future. Whether, then, these possible developments continue to favor philosophy, as Figure 3 projects, is difficult to determine. However, on the general argument from Smith and Arthur I have employed, since the overall landscape of primary and meta-field technologies is a growing one, sustainable specialization seems likely to continue and expand, if in ways too soon for us to say much about. Figure 4, then, is both open-ended and more complicated because the future of the primary field these meta-fields depend upon is unclear. In the closing section, accordingly, I draw a few conclusions about the general character of economic methodology and philosophy of economics as meta-field research.

## 7. Diversity and pluralism in economic methodology and philosophy of economics



The special issue of *Journal of Economic Methodology* that Wade Hands and I designed was intended to encourage authors to freely address subjects they thought were important and perhaps insufficiently well appreciated, while allowing them to determine the balance between continuity and change in the overall field however they understood it. We also consciously invited both senior and younger contributors in the expectation that if there were cohort effects in topic selection, this would bring them out, and avoid biasing the issue in a backward-looking or forward-looking way. We leave it to future readers of the issue, then, to judge how the overall mix has turned out and how it compares with the Millennium issue twenty years earlier.

Nonetheless, the Smith-Arthur argument I have used does suggest a possible future for economic methodology-philosophy of economics. Its main conclusion is that its divisions of labor and forms of specialization are characteristic of growing systems, and that increasing diversity in research in the field, not less, is what we should expect of it in the future. Thus, just as there should continue to be specialists in fields, for example, that examine the details of disappearing languages and the strategies behind long-forgotten battles, so there should continue to be specialists in economic methodology-philosophy of economics that examine unanticipated topics with connections to economics yet uninvestigated.

Does this project a future of greater and greater intellectual fragmentation in which communication becomes more difficult and costly? Might, for example, economic methodologists' historical investigations of the intricacies of rent theory and philosophers of economics' investigations of the epistemological significance for economics of Kant versus Hegel fragment their shared field?

What all four of the Figures above say regarding this question is that, compared to primary fields, meta-fields actually have an advantage in communicating with one another because they broadly share the subject from which they are derived, and this acts to limit and anchor their respective domains of specialization. This integration may not rise to the level of multidisciplinary, or if so only on certain topics and from time to time, but it seems crossdisciplinarity, if irregular and unpredictable in its directions, is likely a fair description of this shared investigation of economics.

Economics meta-fields, it's worth noting, make one important case for pluralism in economics because they demonstrate that diversity is compatible with and indeed derived from a general development of economics. This is one kind of unity of science argument, but it places weight not on a conceptual coherence, which has arguably been and may still be an ambition of much unity of science thinking, but rather on a 'unity' in science derived at the level of practices and institutions. As such, I argue pluralism both describes the economic methodology-philosophy of economics landscape, and also amounts to a program those in the field ought to promote and recommend as central to its continued development.

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