Objectivity in Economics and the Problem of the Individual

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Abstract: This paper addresses objectivity in economics. It criticizes a closed science, ‘view from nowhere’ conception of economics and defends an open science, ‘view from somewhere’ conception of objective science. It ascribes the first conception to mainstream economics, associates it with its principle practices – reductionist modeling, formalization, limited interdisciplinarity, and value neutrality – and argues their foundation is the Homo economicus individual conception. Two problematic consequences of adopting this stance are: (i) value blindness regarding the range and complexity of human values; (ii) fatalism regarding human behavior associated with employing a tenseless representation of time. The paper contrasts the principle practices of an open science, view from science conception – complexity modeling, mixed methods, strong relationships to other disciplines, and value diversity – and argues their foundation is a socially and historically embedded economics individual conception that avoids the value blindness and fatalism problems.

Keywords: objectivity in science, science practices, Homo economicus, value-blindness, fatalism, science bubble

Scientific knowledge is social both in the ways it is created and in the uses it serves.

Longino (1990, p. 180)

In its excessive quest for generality, utility-maximising rational choice theory fails to focus on the historically and geographically specific features of socio-economic systems. As long as such theory is confined to ahistorical generalities, then it will remain highly limited in dealing with the real world.

Hodgson (2012, p. 94)

And one might almost say that these foundation walls are carried by the whole house.

Wittgenstein (1974, sect. 248)
1 Objectivity in economics: The mainstream view from nowhere science conception

Might mainstream economics be a science bubble? The long history of science is filled with examples of dominant, influential approaches that were later shown to be based on mistaken conceptual foundations, and a case can be made that this is so of mainstream economics. Sciences, like other world views, historically evolve, change, and get superseded. In the history of science, worries often emerge when significant evidence cannot be accommodated within an approach or must be interpreted to fit pre-existing conceptual commitments. The emergence of behavioral economics might signal the beginnings of this regarding mainstream rational choice theory. Yet in the long run the issue is whether a science approach produces objective science. But what does objectivity in science involve and what basis is it thought to have in mainstream economics? Most of this paper addresses this issue. At the end I return to the science bubble question.

The first influential use of the term ‘mainstream economics’ was in seventeenth edition of Paul Samuelson and William Nordhaus’ Economics textbook (Samuelson and Nordhaus, 2001). Since then there has been considerable discussion regarding what ‘mainstream’ means. Some have emphasized differences between neoclassical or orthodox and heterodox economics (Lawson, 2003, 2006; Dequech, 2007-2008; Lee, 2009; Mearman, 2011; Jo et al., 2017; Dow, 2021). Others have argued new approaches in economics have shifted economics away from an exclusively neoclassical economics toward a more multi-sided economics drawing on both heterodoxy and other social science disciplines (Colander, Holt, and Rosser, 2004; Davis, 2006, 2008; Rodrik, 2015; Angner, 2019; Crespo, 2020; Bögenhold, 2021; De Vroey and Pensieroso, 2021; Primrose et al., 2022; Ross, 2022; Truc, 2022).

I share many of these ideas, but differentiate mainstream and non-mainstream approaches according to whether they employ closed or open conceptions of science. This distinction – originated by Ludwig von Bertalanffy (1968) – has been used in a number different ways in history and philosophy of science, and more recently in economics to characterize different schools of thought (Dow, 2004; Chick and Dow, 2005; see Davis, 2023) and in Critical realist philosophy of economics (Lawson, 1997, 2003, 2023). I add to this a distinction between a ‘view from nowhere’ closed conception of science and a ‘view from somewhere’ open conception of science. I then associate these two conceptions and views with two alternative ways of looking at research practices in economics.

Objectivity is far from being an issue that concerns mainstream economists, but if called upon to address it might they rest their defense of economics’ objectivity on these research practices: reductionist modeling, formalization, limited relations to other disciplines, and value neutrality. If asked to explain why they make economics an objective science, they might say they make economics like the physical and natural sciences that secure objectivity by enabling scientists to, as it were, ‘stand outside’ their subject matter in a disinterested way.
This is the famous ‘view from nowhere’ idea in science (Nagel, 1986; Sugden, 2018; Reiss and Sprenger, 2020). The rationale behind it is that objectivity in science depends on scientists being independent of their subject matter. Mainstream economics’ research practices, then, would produce this independence. It would follow, were this true, that the contents of economics, including the Homo economicus doctrine and the full range of analysis dependent upon it, provides an objective representation of economic life just as if economists stood outside it and saw clearly through a glass window the world as it is in itself.

However, this is not the view of science that physical and natural scientists hold. Their idea is that objectivity in science involves a ‘view from somewhere’ and scientists instead ‘standing inside’ their subject matters in an interested way. For example, astronomers, pre-eminent physically, natural scientists, are able to investigate a wide range of the electromagnetic spectrum not visible to the human eye because they have developed a number of specialized ‘viewing’ technologies designed to allow them to also ‘see’ the infrared, ultraviolet, radio, gamma, microwaves, and x-ray bands of the spectrum. Thus, what science sees in the world depends on how scientists see, where this depends on their understanding of how their investigation influences what they see. Scientists always stand inside their subject matters, and the idea that they could stand outside them is a fiction that distorts their representation of the world.

In mainstream economics, I argue, this ‘view from nowhere’ creates two false impressions about the economy: first, that what mainstream economists say exists in the economy is all that there is to be seen; second, that the economy appears to be a relatively deterministic system independently there to be discovered. The two corresponding effects of this misconception are: the first blinds us to the full range and complexity of human values and the different roles they play in economic life and society; the second, contrary to human freedom, imposes fatalism on economics regarding how people direct their lives and how economies can be constructed to promote human well-being and social goals. In the next two sections, I argue that both effects derive from the Homo economicus doctrine that I have argued is foundational to mainstream economics and the lynchpin of its ‘view from nowhere’ understanding of economics as a science (Davis, 2003, 2011).

a. Mainstream economics’ value-blindness

The mainstream Homo economicus doctrine narrows people down to self-regarding or essentially self-interested, isolated individuals, who only interact at a distance from each other through markets, and for whom direct interaction is an ‘externality’ that makes markets inefficient. The means for this is its commitment to value-blindness. Central to this, and the foundation of its utility maximization understanding of individual behavior, is the concept of subjective preference. Preference is of course a value concept, but though there exists extensive thinking about of the nature of value in science, literature, philosophy, and human thought generally, the mainstream sees only subjective preference, defines it via rational theory’s standard axioms, and thereby reduces value to a single, purely abstract relation. Only then does it makes sense to say people maximize utility, since were we to acknowledge the many different ways and things people value, it would make little sense to say people maximize just one thing.
Thus, all one is permitted to say/see when we speak of the many ways people value things is the ordinal preference relation. All different motivations they might have for why they prefer one thing to another, how much so, how any one set of preferences relates to other sets of preferences, and how preferences are related to different kinds of values (ethical, prudential, personal, aesthetic, attitudinal, etc.) are all set aside with the claim that because preferences are subjective, nothing can be said about their content.

This commitment to an abstract, logical representation of the preference concept is rarely explained or justified. Most rational choice theory practitioners do not recognize that it involves a philosophically controversial epistemological stance. Nor is there much methodological or historical discussion in economics regarding what gets assumed in this logical turn. Why, we should ask, does rational choice theory need to be ‘rational’ in this specifically logical way? What are the grounds for this narrowing of the concept of value?

In twentieth century philosophy, the idea that concepts and theories need logical formulation is associated with logicism, a Platonist philosophical view resurrected in the early twentieth century and associated with Gottlob Frege and Bertrand Russell’s effort to reduce mathematics to logic and Ludwig Wittgenstein’s early logical approach to philosophy. Though Kurt Gödel overturned their larger ambitions, the conviction that philosophy and science required logical foundations was influential, and a succession of individuals now seen as the founders of modern economics – Ragnar Frisch, John von Neumann and Oskar Morgenstern, Jacob Marschak, Kenneth Arrow, Gerard Debreu, Paul Samuelson, and others – subsequently transferred this vision to the interpretation of neoclassical economic theory in developing the axiomatic foundations of what became rational choice theory. In contrast to earlier neoclassical thinking dating to the late nineteenth century that treated preference as a broad, heuristic concept, preference became a concept that depended upon very specific logical formulation. People’s rational behavior then reflected that they possessed ‘stable, well-ordered preferences.’

Rational choice theory has this history at its foundation. Though now it is commonly thought the theory implies people are rational in terms of their reasoning capacity, what ‘rational’ really means is that their behavior can be explained in terms of a set of logical axioms that allows us to say they have stable, well-ordered preferences. Not questioned is whether there are scientific reasons to think this, what philosophical commitments this involves, what their possible epistemological limitations might be, and whether there are conceptual and theoretical consequences of this commitment for economics as a science – all despite the evident narrowing of the concept of value that this produced.

For proponents of the theory rather than engage these questions and enter into discussion over what kind of concepts economics should rest on, particularly regarding one of the most human of all concepts, better to say that economics is simply about people’s preferences rigorously understood, distance the preference concept from the broader idea of value, and say values in the broader sense are ‘non-scientific’ so do not belong in economics. Value concepts, then, are ‘non-scientific’ specifically because they lack precise logical foundations. Given this, one is then left

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1 There are important exceptions (see especially Weintraub, 2002; Giocoli, 2003; Moscati, 2018). See Hands (2001) for the early and later twentieth century history of methodology and philosophy of economics.
2 See Hansson and Grüne-Yanoff (2022) for the history of development of the preference concept in economics.
to devote oneself to mathematically modelling behavior in rational choice terms. This ties ‘progress’ in economics to “[t]he development and use of mathematical models [that now] is indeed representative of what large parts of economics does as a modelling science,” and means that “theoretical progress is no longer what economists primarily aim to achieve” (Boumans and Herfeld, 2023, 224, 225). In terms of recent behavioral economics reasoning this is a kind of confirmation bias in which its theory can never be falsified or overturned.

A basic principle of science this violates is to close off the development of a science to new information. Scientific theory constantly undergoes change and development as it accommodates new kinds of information, as occurred when astronomers and physicists changed their theory of what we can see when they developing new technologies that replaced seeing by human vision alone with what can be seen in the electromagnetic spectrum. It is ironic, then, that until quite recently mainstream economics barred experiments as a technology of investigation, claiming that they offered nothing new to be seen that rational choice theory did not already explain. Now of course experimentation is widely practiced in economics, and how choice is ‘rational’ has become an issue. Why, then, should most economists continue to defend the theory?

One possible rationale is that were preference relationships allowed to be more complicated incorporating many kinds of values, the whole apparatus of predictable equilibrium, supply-and-demand relationships could break down, taking much of mainstream thinking with it. Then what would economics have to offer as an objective science? I return to this issue in the following section in connection with the mainstream’s fatalism problem. But ultimately, I believe, the deep rationale for the mainstream’s narrow conception of preference/value rests on its narrowing the ontological conception of the person to what fits the idea that people are self-regarding or self-interested, isolated individuals who interact mostly at a distance from one another through markets. I comment briefly on the Platonist philosophical instincts that undergird this view.

We can characterize the mainstream’s narrow conception of preference/value embodied in its practice of reductionist modelling, as an abstract essentialism – the philosophical view that what science investigates can ultimately be reduced to the elaboration of a sets of underlying of essences largely hidden from ordinary view. Plato famously elaborated this view in his Republic (1941), arguing that society ought to be governed by ‘philosopher kings’ who alone can see and fully apprehend these essences (or his transcendent Platonic forms). These ‘philosopher kings’ tell us what we cannot see, and tell us what we ought to see, which only they can truly see. For the mainstream, this hidden underlying essence of value is the abstract preference relation. As the essence of value, it secures economics’ objectivity as a science, and thus its unique role in producing a well-governed society explained in terms of the market mechanism – all as encapsulated in Homo economicus doctrine.

Plato’s theory treated the everyday phenomena we observe as imperfect representations of the underlying essences on which they depend. What we ordinarily see is at best an approximation and further confirmation of those underlying essences. The error of the ordinary person is to take the way the phenomena appear to them as meaningful and delivering valuable information. On this view, empirical research in economics can ultimately only confirm rational choice theory. Experiments, if they contradict it, must be redone because they must somehow be mistaken. If people sometimes appear to be altruistic, this still needs to be shown to be utility maximizing. If
people are said to show present bias and weakness of will, this is only because we have not properly identified their ‘true’ inner preferences.

Consider, now, how mainstream value blindness goes hand-in-hand with fatalism and a rejection of human freedom, and how this imposes a particular conception of time upon economic life.

b. Mainstream economics’ fatalism and the problem of time

When we increase the number and kinds of values we say operate in economic and social life, human behavior becomes considerably more complex. In contrast to the mainstream reduction of value to one form that produces a single set of behavioral relationships, when different types of values interact in multiple, often unexpected ways, human behavior becomes less predictable and equilibrium-like and more indeterminate. Indeterminacy is not same thing as human freedom, but it is a reason to suppose it exists whereas arguing that behavior is highly predictable and determinate puts human freedom in question. Indeed, if people are generally predictable, which a reduction of human values to preferences and the logic of preferences allows one to say, then there is no need to even use a freedom concept or say people behave ‘freely’ other than to appeal to popular sentiments. Given that most people believe freedom exists in some form, it is not surprising that the concept is used informally in economics, as in claims that economics is ‘choice’ theory. Here I argue that underlying the mainstream view is an understanding of time in which people really do not have choices.

The meaning and nature of time is a largely neglected subject in the methodology of economics, so we need to turn to philosophy to understand some of the main issues involved (see Gale, 1967; Emery, Markosian, and Sullivan, 2020). A key issue concerns the difference between the past-present-future temporal sequence and the before-after temporal sequence. The former involves tensed statements, where what is said to be true changes with the passage of time – known as a dynamic temporal idea. For example, one could say ‘Napoleon is alive’ is true when he was, but not after he was not. In contrast, the latter involves tenseless statements, where what is true is always true and unaffected by the passage of time – known as a static temporal idea. For example, it will always be true that Napoleon died in 1821.

Aristotle addressed one thing that mattered about the difference between these two ways of thinking in his famous future sea battle problem (known as the problem of future contingents), arguing that fatalism derives from trying to explain time in human affairs in tenseless, before-after terms (Aristotle, 1984). Imagine, he said in an early thought experiment, that at some date it is true that a possible future sea battle can be avoided. If we think only in tenseless, before-after temporal terms, it would then also need be true in the future that it could be avoided. That is, when we say what is true is always true, this is not affected by the passage of time, and thus we must suppose a future sea battle will be avoided as predicted. But of course the passage of time overturns many predictions, and it can turn out that a predicted future sea battle ultimately cannot be avoided. The problem is that employing the before-after, tenseless, static time idea in connection with human affairs implies fatalism, or that it treats the future as predetermined and implies people lack the freedom to affect how it plays out. Aristotle concluded that in human
affairs we must think about time in tensed, dynamic past-present-future terms where something can be true at one time but cease to be at a later time.

Note that mainstream economics’ *Homo economicus* maximization analysis employs a tenseless, before-after, static temporal thinking. If it is true that individuals maximize utility, individuals’ expectations and beliefs about the future this maximization depends on must true. If they were not, they would not maximize utility. Yet if those expectations and beliefs about the future must always be true, then what is true at one time is tenselessly always true, the future is predetermined, fatalism applies, and no choice really occurs. If individuals maximize utility, they cannot be wrong about the future.

If we instead think about time in tensed, dynamic past-present-future terms, where something can be true at one time but not at a later time, this would mean that what individuals expect and believe about the future could be true when they determine it to be so, but not after they act upon it. This is inconsistent with utility maximization since it implies that maximizing utility today may not maximize utility. But it is not inconsistent with understanding individuals as constantly adjusting their behavior with the passage of time, doing as well as they can in the present, but acting on the assumption that things that are true might later not be, thus finding out they are often wrong about the future, thus needing to change what they think is true, and accordingly never really maximizing anything.

The mainstream locks in its before-after, static temporal utility maximization thinking with its comparative static model of equilibrium adjustment. In that model, an equilibrium in which all individuals utility maximize can be upset by some unforeseeable exogenous shock. Individuals then adjust to shocks by determining what will again maximize utility. But that the world has changed does not imply it was not true they maximized utility before a shock. They did, but their expectations and beliefs about the future formed in the past are discontinuous with those they form after the shock. Thus, as if in an entirely new world, they can then again truly maximize utility based on their new expectations and beliefs about a new future, and it is not the case that what was true at an earlier time ceased to be true at a later time. The world just unexplainably changed.

This comparative statics reasoning draws on the mainstream’s abstract essentialism. The idea of an exogenous shock, a concept which really has no real temporal meaning, eliminates the passage of time and makes the only temporal sequence possible the before-after static understanding. In fact, this is really less a temporal idea and more a simple ordering idea. Like Plato’s philosophy that defines reality in terms of timeless abstract essences, it tells us the passage of time is essentially unreal, and the phenomenon of time passing people say they experience is only an imperfect representation of the underlying nature of time as a simple ordering.

Aristotle, who had a different understanding of science more like modern scientists’ view from somewhere understanding, rejected Plato’s transcendent forms or abstract essences view from nowhere conception, and instead sought to explain the phenomena as we observe them. He saw our predictions are often wrong, concluded fatalism was wrong, and argued that understanding human affairs required the present-future temporal sequence and the passage of time idea. This science thinking is also present in non-mainstream economic approaches that incorporate such phenomena as path-dependency, hysteresis, irreversibility, and the idea that the economy is an
institutionally rich, complex, evolving system. I add that employing the dynamic understanding of time also requires we give up *Homo economicus* conception for an understanding of individuals who are socially embedded with many kinds of values and historically embedded in continually adjust their behavior in a changing economy – an adaptive individual conception.

This alternative understanding of the economy and individuals implies a different view of what makes economics an objective science. I characterize it as an open science view from somewhere conception, and compare it to the mainstream’s closed science, view from nowhere conception.

2 Objectivity in economics: The open science view from somewhere conception

The open science idea is associated with the open science movement and the goals of reducing barriers to participation in scientific research and increasing worldwide access to its results to make scientific production more transparent, socially collaborative, and sustainable (OECD, 2015-10-15; UNESCO, 2021). Though the open science movement operates with a collection of different principles seen to generate open science, and though there are different competing theories of what open science involves and how to foster it, I focus on one of the principles associated with open science – open methodology – and interpret open science from an epistemological or methodological perspective as a view from somewhere conception of science that relies on two main heuristic principles. Open sciences:

(i) employ provisional entry points subject to re-evaluation in relation to the scientific frameworks they produce;

(ii) develop according to how the entry point-frameworks relationship evolves over time through an interplay of empirical and theoretical investigation.

These entry points are scientists’ views from somewhere that reflect their understanding of the state of a science at any one time. As illustrated by the history and development of the evolution of the electromagnetic spectrum, openness of a science can be interpreted as a matter of making it possible for how the different ways in which scientists see the world to influence and determines what they see, and for what they see to drive scientific investigation of new ways for how they might see the world.

In the history of the evolution of the electromagnetic spectrum early scientists had theories of the visible light spectrum, but observing that white light breaks up into different colors when seen through glass prisms, it was inferred that the means or technology for how we see influences what we see, and this ultimately required that what the spectrum involves be redefined in ways that went beyond its human visibility understanding. In the nineteenth century, then, new technologies led to the discovery of infrared and ultraviolet radiation beyond the two ends and boundaries of the visible light spectrum. This initiated the redefining of what was ‘visible’ that ultimately produced a theory of what became the electromagnetic radiation spectrum. This theory then led to the development of additional technologies that made possible the discovery of x-rays, gamma rays,
radio waves, and microwave as further forms of radiation, which in turn allowed further refinements in the theory of the spectrum.

Objectivity in science, accordingly, is not a matter of applying and re-applying the same set of scientific principles, continually elaborating and redefining their meanings, with observation of the world organized around always confirming those same principles. That type of view employs a closed, view from nowhere science conception. Rather it is a matter of how scientific principles evolve as they are put to use in the world, and how this may lead to discoveries of new phenomena that lead to the reconceptualization of those principles. That is, scientific ideas and technologies co-evolve and at any one time presuppose an historical view from somewhere. I characterize this type of view as an open, view from somewhere science conception.

Table 1 compares the two kinds of science conceptions in terms of their epistemological basis, their form of development, and their temporal nature.

**Table 1: Characteristics of open and closed sciences**

<table>
<thead>
<tr>
<th>science conception</th>
<th>epistemological basis</th>
<th>form of development</th>
<th>temporal nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>open</td>
<td>reflexive</td>
<td>two-way</td>
<td>dynamic</td>
</tr>
<tr>
<td>closed</td>
<td>essentialist</td>
<td>one-way</td>
<td>static</td>
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</table>

How do these two science conceptions differ in regard to their principle practices? Table 2 characterizes the practices that open and closed science approaches in economics employ with respect to types of modeling, methodological forms of analysis, relationships to other disciplines, and positions on values. Whereas the principle practices of mainstream economics are reductionist modeling, mathematical formalization, limited relations to other disciplines, and value neutrality, the principle practices of open science economics approaches are complexity modeling, mixed methods analysis, strong relationships to other disciplines, and emphasis on diverse values.
Table 2: open and closed science practices

<table>
<thead>
<tr>
<th></th>
<th>types of modeling</th>
<th>methodological forms of analysis</th>
<th>relationships to other disciplines</th>
<th>positions on values</th>
</tr>
</thead>
<tbody>
<tr>
<td>open</td>
<td>complexity</td>
<td>mixed methods</td>
<td>strong</td>
<td>diverse values</td>
</tr>
<tr>
<td>closed</td>
<td>reductionist</td>
<td>Formalization</td>
<td>limited</td>
<td>‘value neutrality’</td>
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The practices the mainstream closed science conception employs have the *Homo economicus* individual conception as their underlying basis. The practices that open science economic approaches employ have their underlying basis in a socially and historically embedded adaptive individual conception. I discuss the latter’s practices from this vantage point.

a. Complexity modeling in economics

Adopting a broader account of the what motivates people’s actions and choices in explanations of economic behavior takes us beyond the preference-based, deterministic accounts of how markets and economies work the mainstream employs. While this means there is less predictability in economic explanations, it also creates a larger role for human freedom in descriptions of people’s behavior and expands economics’ policy space beyond the narrow scope of mainstream welfare efficiency analysis. As an open science practice built around the two heuristic principles above, complexity modeling rejects essentialist modeling, models reflexivity in the form of feedback relationships, represents economics systems in a two-way and two-level manner, and explains the economy as dynamic and evolving.

Herbert Simon’s paradigmatic model of a complex system illustrates these properties (Simon, 1962). Using the idea of what he called a “nearly decomposable system” (474), he illustrated such a system with how a building’s temperature system works as a complex system. First, individual rooms in the building have independent temperature systems. Second, these individual room temperatures are only “nearly decomposable” from one another because they are affected by the rooms’ proximity to one another. Third, because the overall building temperature is different from individual room temperatures, individual room temperatures adjust, but their interactive effects cause the overall building temperature to change, which again affects individual room temperatures; etc.
The feedback relationships involved thus move reflexively in two directions between two levels of the system, and the process of temperature determination continues indefinitely.

Roughly, by a complex system I mean one made up of a large number of parts that interact in a nonsimple way. In such systems, the whole is more than the sum of the parts, not in an ultimate, metaphysical sense, but in the important pragmatic sense that, given the properties of the parts and the laws of their interaction, it is not a trivial matter to infer the properties of the whole (Simon, 468).

When we model the economy as a complex economic system, this two-way interaction operates between its micro-level, where agents form expectations and interact, and its aggregate macro-level, where we see the overall effects of that interaction. Mainstream models suppress these two-way reflexive feedback effects by ruling out that “the whole is more than the sum of the parts” and by making it “a trivial matter [for agents] to infer the properties of the whole.” Agents’ expectations are either assumed to be ‘rational’ meaning they fully (and unrealistically) comprehend the effects of everyone’s choices on the economy as a whole, or their micro-level interaction is examined in isolation from its possible effects on the economy as a whole. This makes it possible to assume agents maximize utility in tenseless temporal terms, so that what is true at any given point cannot be upset by what happens later. The economy then ceases to be a dynamic, evolving system, and can be formalized in a highly determinate way.

Realistically, however, “it is not a trivial matter [for agents] to infer the properties of … whole” economic systems, so agents must continually adapt their behavior and their interaction with other agents causes the overall systems they occupy to change over time. In temporal terms, what may be true when they act need not be true later when their interaction produces its effects on the overall economy. As these overall effects feed back on agents, they must accordingly adapt to their new circumstances. Thus, agents are thus adaptive, and as Simon said, ‘satisfice’ rather than maximize utility maximize (Simon, 1956). They may guide their behavior by various rules or principles that have been effective in the past when the economy changed slowly, but they likely abandon or modify these rules when it changes more dramatically.

Thus, economic agents – and individuals – change with the passage of time just as the economy changes with the passage of time, and need to be seen as socially and historically embedded. Indeed, the economies they occupy are not just market processes, but social systems with inherited institutional, legal, and cultural characteristics that make it far from “a trivial matter to infer the properties of the whole” associated with whole economies. These are the entry points of complexity modelling as an open science practice with a view from somewhere understanding of economics as an objective science.

b. Mixed methods analysis and economics’ relationships to other disciplines

I treat mixed methods methodological analysis and economics’ relations to other disciplines together because they tend to go hand-in-hand when we contrast open and closed conceptions of
science in economics. Mainstream economics and other social sciences, then, clearly differ in regard to both the scientific methods they employ and in their respective degrees of openness to methods employed in each other. Other social sciences have adopted some of economics’ quantitative methods, but economics has adopted few of other social sciences’ methods. Instead, mainstream economics in the postwar period has increased its reliance on mathematical formalization as a method of representation and investigation, and has all but given up the qualitative methods it shared with other social sciences before the war.

To take methods of analysis first, mixed methods research is a methodologically pluralist, pragmatic approach to scientific investigation that combines different quantitative and qualitative methods – for example, surveys and numerical data – in the collection of evidence, its analysis, and in the development of theory (Starr, 2014). The main rationale for mixed methods research is that increasing the kinds of evidence and thus the means of analysis sciences employ increases their investigative capacities and reduces the risk that theories are built upon only one, possibly limited source of evidence. Since having different kinds of evidence that different methods produce usually does not generate sharp theoretical inferences, mixed methods research offers a different strategy for theory elaboration. In effect, it creates a forum for theory development in which the contributions of different types of evidence are evaluated and debated in terms of their different theoretical implications. This makes the relationship between evidence and theory open-ended, and allows for a continual comparison of entry points and theoretical outcomes.

One influential approach draws on the metaphor of triangulation. Should different methods produce a collection of similar theoretical results, this gives further direction regarding what sorts of theories should be investigated (Denzin, 1970; Downward and Mearman, 2007). To put this in terms of the epistemological basis of open science (Table 1), the evidence produced by different methods and the theory possibilities they generate reflexively determine one another. To put this in terms of the modelling characteristics of open science (Table 2), this calls for a complexity modelling approach that combines different kinds of evidence that (as Simon put it) “interact in a nonsimple way.”3 Science is open in that clashes and disagreements between different approaches may persist or dissipate.

When we consider disciplines’ relationships to other sciences, we see that when a science borrows from other sciences which uses different methods of investigation, this influences the kinds of evidence it incorporates and thus the weight it places on discovery. Further, since the different methods that different sciences employ reflect the different kinds of phenomena they investigate, borrowing methods from one another science also introduces ‘new’ phenomena into a science. This makes its evidence-theory relationship more open-ended. In terms of the Table 1 contrast between open and closed conceptions of science, its form of development is dynamic and two-way when it borrows from other sciences rather than static and one-way when it is reluctant to do so.

c. ‘Value neutrality’ vs. expanding economics’ value spectrum

3 Models, then, are analogous to recipes in which different types of ingredients are combined according one’s explanatory goals rather than pre-given logical templates (Boumans, 1999).
Value neutrality’ bars ethical or normative values on the grounds that objectivity in economics requires it be positive and free of such values. Even welfare economics and efficiency judgments can be seen to be non-normative if taken only to register different possible states of affairs and not engage their normative content. Of course economists say welfare and efficiency ought to be promoted, but for most this only implies people’s preferences should be satisfied because this is seen as descriptive of people's behavior. Thus, preference satisfaction in itself has no ethical content.

Yet preferences are still values, so ‘value neutrality’ also means that out of the wide array of human values only the preference value concept should be included in economics. This combination of exclusion and reduction of value to preference concept is important to framing the mainstream’s essentialist, closed science, view from nowhere terms. Indeed, ‘value neutrality’ has a special status compared reductionist modelling, formalization, and limiting relationships to other disciplines since they concern how economics is done but ‘value neutrality’ concerns what it is about. Thus, one could give up *Homo economicus* and still maintain these other three practices, but if one gave it up and adopted a richer conception of the person it is unlikely one would could maintain ‘value neutrality’. That is, ‘value neutrality’ is both necessary to the *Homo economicus* doctrine and also an implication of it. Thus, while these other three practices have fairly wide scientific use, the mainstream’s essentialist reduction of all value to preference and its exclusion of millennia of thinking about the diversity of human values is exceptional in social science. What could justify this?

For Aristotle, essentialism was simply a fundamental philosophical mistake and manifestation of intellectual *hubris*. Plato’s transcendent forms were an excess and exaggeration of philosophical thinking that blinds us to the phenomena science investigates and elevates ‘philosopher king’ scientists who say what we can and cannot see. In modern philosophy, the later Wittgenstein also criticized his earlier essentialism as a fundamental error in and abuse of philosophical thinking. He attributed it to an almost religious predisposition people have to believe something simple is always ‘hidden’ beneath the multiplicity of phenomena. His advice was rather than start by asking what is ‘common’ behind all the instances of something being investigated, look instead to see what their many interrelationships were.

Don’t say: ‘There *must* be something common … but *look and see* whether there is anything common at all. – For if you look at them you will not see something that is common to all, but similarities, relationships, and a whole series of them at that … a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail (Wittgenstein, 1953, para. 66).

What might we see when we examine the “complicated network of similarities overlapping and criss-crossing” in the wide array of human values? And, if ‘value neutrality’ is required for *Homo economicus*, what does making the wide array of human values central to economics imply about what individuals are?

First, given the wide array of human values reflects the multiplicity of human social relationships, people should be seen to be social beings with a variety of social identities, not asocial, atomistic
bundles of preferences whose connection to one another occurs mechanically through markets. Second, just as people’s social relationships can conflict, so their various values can conflict, in contrast to how the axiomatic interpretation of preferences makes people’s preferences logically consistent and ensures smooth substitutions on indifference curves. Third, despite the mainstream’s effort to exclude ethical values from economics, an inspection of human history shows that ethical reasoning and debate over what people ought to do is pervasive and a fundamental aspect of people’s behavior.

Yet, if mainstream economics is as removed from the social world as these points imply, if people are socially and historically embedded individuals rather than utility maximizing *Homo economicus* ones, and if at root of all this is the mainstream’s essentialist view from nowhere conception of economics as a science, might mainstream economics be science bubble? I turn to this question.

### 3 Might mainstream economics be a science bubble?

I previously addressed this question using a financial market boom-bust model (Davis, 2017). Here I frame that argument in broad philosophy of science terms drawing on the history of science and its record of successes and failures. The idea that a science could be like a bubble is suggested by Thomas Kuhn’s famous scientific revolutions view (1962/1970). Sciences are built upon paradigmatic foundations – idealized conceptual structures – but these foundations are often only weakly constructed and can be fragile. Scientific knowledge accumulates over time across paradigms, each of which at the time of its development produces limited visions of that accumulating knowledge.

The history of science shows that successful science paradigms have been abandoned and replaced when new paradigms were constructed upon new foundations. A short list of superseded theories includes in astronomy, the Ptolemaic geocentric theory of the universe and the nebular hypothesis of the solar system’s origin; in biology, spontaneous generation, Lamarckism, Mendelian genetics, and recapitulation theory (‘ontogeny recapitulates phylogeny’); in chemistry, alchemy, caloric theory, and phlogiston theory; in physics, Aristotelian theory, Newtonian classical mechanics, and a long list of atomic theories; in geography, flat earth theory, and expanding and contracting earth theories; in psychology, phrenology, and stimulus–response behaviorism.

Kuhn did not explain fragility in a science’s foundations or what precipitates their examination and abandonment. Karl Popper (1959; 1934) earlier argued that the claims of science are always fallible and potentially subject to falsification. However, when empirical evidence was sufficient to do this was unclear since sciences employ a variety of auxiliary assumptions that can be adjusted to protect them from falsifying evidence. Imre Lakatos (1970) consequently argued that scientific research programs could always insulate their key propositions, their ‘hard cores,’ to withstand empirical refutation. Thus a science could possess fragile conceptual foundations and still endure for long periods of time – though as the history of science shows still ultimately fail were those foundations weak. In effect, such approaches are like science bubbles, exhibiting dramatic expansion in a scientific community but also vulnerable to a collapse. What might explain the dynamic by which they survive for a time and then fail?
Since bubbles were originally associated with financial phenomena where in history questionable assumptions prevailed for time later to fail (often spectacularly), we can look to financial bubbles to model this dynamic of survival and failure. The model that the financier George Soros developed is interesting, because he studied under Popper, adopted Popper’s fallibility principle, and added a reflexivity or feedback mechanism principle to produce a dynamic of adoption and abandonment of an investment. He described a financial bubble as a boom-bust process in which a positive feedback upswing phase in an investment proceeds for a time under a ‘misconception’ regarding the merits of that investment until it comes to be seen as such, after which that investment is seen as over-valued, a negative feedback disinvestment, downswing phase takes over, the investment collapses, and the bubble breaks (Soros, 2013).

If mainstream economics, then, is a science bubble, and investment in mainstream principles has the same sort of historical dynamic, roughly the first half of the twentieth century through the 1970s can be seen as a period of continued investment by economists in the foundations of mainstream thinking – equivalent to a positive feedback boom phase – and the time since then with new research programs in economics that contest many fundamental mainstream assumptions (see Colander, Holt, and Rosser, 2006) can be seen as the beginning of a period of increasing disinvestment by economists in those foundations – equivalent to negative feedback bust phase. The ‘belief reversal’ this involves (Davis, 2020) depends on it being recognized that some ‘misconception’ underlies the assumptions that gave rise to the boom phase. What might that ‘misconception’ be?

I previously argued (Davis, 2017) that mainstream economics’ chief ‘misconception’ is that it treats economics as if it is a natural rather than a social science. The mainstream view from nowhere conception of economics’ objectivity, then, provides a further interpretation of this natural science ‘misconception’ in that it associates economists’ posture of disinterestedness with ‘value neutrality’ as a scientific practice. Thus, if the boom-bust model tells us something about mainstream economics, we should look for evidence there exists the beginning of a negative feedback disinvestment, bust phase motivated by the conviction that it is a ‘misconception’ that economics is like a natural science.

Consider, the 1980s emergence of heuristics and biases behavioral economics, often seen as one of the most significant developments in recent economics. Its key assumption is that people’s environments influence their choices. Thus, research in this scientific program investigates the many ways in which how people make choices influences what choices they make – a view from somewhere conception of economics that rejects the mainstream’s view from nowhere understanding of pure choice theory built upon a set of abstract axioms governing preferences – most importantly the independence axioms.

Many mainstream economists would hesitate to say ‘we’re all behavioral economists now’ (Angner, 2019), yet the rapid growth of behavioral reasoning in economics can nonetheless be seen as a process of disinvestment in the fundamental ‘hard core’ principles of mainstream economics, and as a negative feedback bust phase that regards it as a ‘misconception’ that economics is essentially a natural science. Indeed, when the context of choice matters, people’s
values matter and thus ‘value neutrality’ becomes untenable. Yet if ‘value neutrality’ is untenable, so also is the ‘hard core’ lynchpin of mainstream theory, *Homo economicus*.

How do economists today think about change in the field? If in the past economists were not reluctant to make claims about the new developments in postwar economics, now few comment on the state of economics or participate in debates about whether there is change in economics. At the same time, a recent large survey of economists about the state of economics captures considerable ambivalence regarding economics’ direction and character (Andre and Falk (2021). Perhaps this is a sign of increasing uncertainty about the state of economics.

This is one way to understand the recent ‘empirical turn’ in economics (Hamermesh, 2013; Angrist et al., 2017). Data-driven research, innovation in statistical econometric techniques, case-specific experimentalism, etc. can all be pursued without making explicit theoretical commitments, so if confidence in the foundations of mainstream economics has declined, the whole subject can be avoided. Yet, given the oligopolistic structure of the economics profession (Fourcade et al., 2015; Heckman and Moktam, 2020; Hoover and Svorenčík, 2020), it is also possible to that long-standing theoretical commitments in mainstream economics will survive in unexamined fashion – Kuhn’s fragility thesis.

One thing the failed, superseded sciences listed above arguably shared was an essentialism about hard core’ principles that could not be overturned by evidence – until it was. Yet an ‘empirical turn’ relies on non-essentialist thinking. Do sciences when they move inexplicably from one Kuhnian paradigm to another spend time in such transition phases? If so, perhaps we are beginning to see the last disinvestment in the mainstream paradigm.

**References**


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