

Making sense of economists' positive-normative distinction

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The goal of this article is to provide a slightly different spin on economists' use of the positive-normative distinction by providing some context for its use. The major difference is the following: philosophers and philosophically oriented economists, such as Hilary Putnam and John Davis, see the positive-normative distinction in economics as following from the logical positivist position, and they interpret comments made by economists as reflecting scientific methodological positions that have long since been repudiated by philosophers of science. This article argues that economists' use of the positive-normative distinction developed from the Mill–Keynes methodological tradition, which did not hold logical positivist views. Instead, it had pragmatic purposes and was designed to encourage economists to be more modest in their claims for the implications of economic theory. We conclude by arguing that economist's current use of the positive-normative distinction is problematic, as Davis suggests, but that the best way forward is not to eliminate it, but to reposition it within the Mill–Keynes tradition from which it initially developed. Doing so avoids the problems of associating it with logical positivism, while simultaneously using the distinction to remind economists about the limitations of applying economic theorizing to real world problems.

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Other than for a few specialists, economists do not know, and do not claim to know, a lot about methodology. About the only thing most practicing economists remember about methodology is that it is important to maintain a distinction between positive and normative economics. Despite the lack of precise knowledge of what is meant by positive and normative in just about every principles text you will see the positive-normative distinction, and, as suggested by Davis (2014) the distinction remains important for most economists in how they think of themselves as scientists.

In the eyes of philosophers and philosophically oriented economists, economists' embrace of the positive-normative distinction is indefensible. For example, Putnam (2002) sees it, and the related fact-value divide that he sees as accompanying it, as totally unsupported. In his view, this flawed distinction has caused serious problems to economics. Davis (2014) calls the positive-normative distinction 'indefensible' and turns to behavioral economics to explain economists' attachment to it despite its indefensibility.

The primary goal of this article is to provide a slightly different spin on economists' use of the positive-normative distinction, by providing some context for its use. The major point we are making is an historical point: that philosophers and philosophically oriented

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economists, such as Putnam and Davis, are wrong in assuming that economists' positive-normative distinction follows from an acceptance of the logical positivist methodological position. This leads to a secondary point, that economists' methodology is developed internally, with little regard to deeper philosophical issues raised by philosophers of science, and methodological discussions that will best resonate with them are those discussions that reflect an understanding of what they see themselves as doing.

The outline of the article is as follows. In Section 1, we first introduce the Mill–Keynes methodological tradition as the origin of the positive-normative distinction in economics. In Section 2 we argue that Lionel Robbins should be seen as a continuation of this tradition. In Sections 3 and 4, we discuss how the Mill–Keynes tradition was gradually lost as economic methodology became blended with a highly problematic logical positivist methodology in the Walrasian tradition. In Section 5 we explain why we believe Davis's critique of economists' use of the positive-normative distinction is unlikely to resonate with modern economists. Finally, Section 6 concludes.

1. The historical origins of economists' positive-normative distinction

There is a tendency among philosophers to see the positive-normative distinction in economics as following from the logical positivist position, a position that has long since been repudiated by philosophers of science. Putnam and Davis, mentioned earlier, are good examples of this. They both portray economists' use of the positive-normative distinction as following from logical positivism. For example, Davis argues that

Lionel Robbins essentially adopted the logical positivists' view in his famous definition and characterization of economics, employed it in his paradigmatic critique of interpersonal utility comparisons, and helped put in place the value neutrality view of the positive-normative distinction which most economists continue to hold.

Similarly, Putnam claimed that

by 1935, Robbins was beginning to be influenced by logical positivism [...] In particular, he held strong views to the effect that rational discussion ('argument') is impossible in ethics, and therefore ethical questions must be kept wholly out of economics. (Putnam, 2002, pp. 53 and 54)¹

In Putnam's view this is 'the fact/value dichotomy that Robbins endorsed' (Putnam, 2003, pp. 395 and 396).

The major problem with these arguments is that economists' positive-normative distinction predated logical positivism. Economists' use of positive-normative distinction has its root in the nineteenth-century classical political economy. This tradition predates the early twentieth-century logical positivism, so its use of the distinction did not develop to reflect logical positivist views. The tradition can be traced back at least to Nassau Senior's work, and was most developed in the writings of John Stuart Mill and J. Neville Keynes.

A key element of the Mill–Keynes positive-normative distinction is its association with science-art division. While the tradition of separating out a separate theoretical science portion of economics from a policy art portion actually begins with Mill, an early version of it can be seen in Senior (1836/1951) admonition against drawing policy conclusions from economic theory. He writes:

(An economist's) conclusions, whatever be their generality and their truth, do not authorize him in adding a single syllable of advice. That privilege belongs to the writer or statesman who has considered all the causes which may promote or impede the general welfare of those whom he addresses, not to the theorist who has considered only one, though among the most

important of those causes. The business of a Political Economist is neither to recommend nor to dissuade, but to state general principles, which it is fatal to neglect, but neither advisable, nor perhaps practicable, to use as the sole, or even the principal, guides in the actual conduct of affairs. (Senior, 1836/1951, p. 3)

Mill holds a similar view that economists should not give advice on policy when that advice is only based on the theorems drawn from economics. He argues that ‘the mere political economist, he who has studied no science but Political Economy, if he attempt to apply his science to practice, will fail’ (Mill, 1844/1967, p. 331). The reason Mill confined the role of economists is mainly related to the artificially restricted scope of economic science, which inevitably causes limitations to the applicability of economic theorems.

Mill considered it necessary to have a separate branch of economics that focuses on studying economic phenomenon in order to improve the quality of economic studies. This separation allowed economists to adopt the appropriate methods to study economic phenomena. In Mill’s mind, the scientific branch of economics should be separated not only from ethics but also from other branches of social sciences, such as politics.²

On the ethical front, the science-art distinction separated scientific economics from applied policy economics. He writes:

[Science] deals in facts, [art] in precepts. Science is a collection of *truths*; art a body of *rules*, or directions for conduct. The language of science is, This is, or, This is not; This does, or does not, happen. The language of art is, Do this; Avoid that. Science takes cognizance of a *phenomenon*, and endeavours to discover its *law*; art proposes to itself an *end*, and looks out for *means* to effect it. (Mill, 1844/1967, p. 312; emphasis original)

In short, science deals with ‘what is,’ art ‘what ought to be’ (Mill, 1844/1967, 1872/1974). In Mill’s use, the science-art distinction closely relates to the positive-normative distinction. It is important to notice that for Mill making a normative judgment is not the same thing as making an ethical judgment. The latter is part of the former, but the former can be a judgment irrelevant to ethics.³ In other words, even though economic science belongs to the field of science and ethics to art, the science-art distinction is not a synonym of the distinction between economics and ethics in Mill’s system of knowledge.⁴

In addition to separating economic science from art, Mill also separated economic science from other social sciences. Mill proposed that economics study only those phenomena that are directly related to the desire of pursuing material wealth in order to be able to theorize at all (Mill, 1844/1967, pp. 321–323, 1872/1974, pp. 901–903). Mill recognized the separation was highly artificial, and emphasized that when moving from economic theory to policy economists needed to integrate all the factors analyzed in different disciplines which are artificially constructed in order to get a full picture about economic phenomena. Thus, he emphasized that the conclusions we derive from scientific economic analysis are ‘only true [...] *in the abstract*; that is, they are only true under certain suppositions’ (Mill, 1844/1967, p. 326; emphasis original). In many ways, it is this limiting aspect of Mill’s economics that has been lost by modern economists when thinking about the limitations of applying economic theorems to policy advice.

Mill’s treatment of economics as a separate science was largely motivated by pragmatic considerations. He wanted to improve the quality of economic analysis by adopting appropriate methodology, as he stated in both ‘On the Definition and Method of Political Economy’ and the sixth book of the *Logic of System* (Mill, 1844/1967, 1872/1974). Therefore, it is fair to say that the positive-normative distinction is proposed for pragmatic methodological guidance. It is not concerned with purging values out of economics and has little to do with the logical positivist thesis that the positive-normative or science-art distinction is a fact-value dichotomy. Throughout Mill’s economic and

methodological writings, one can hardly find any claims suggesting economic science is or should be value free. The primary point that Mill tried to make with the science-art distinction is that ‘what is’ and ‘what ought to be’ are different types of knowledge and need to be studied with different approaches.

Keynes (1890/1917), in his presentation of classical methodology, further developed Mill’s insights and developed the fullest statement of what we call the Mill–Keynes tradition (Colander, 1992, 1999). He specifically divides economic enquiries into three different departments: positive science of political economy, the object of which is to establish economic *uniformities*; normative science of political economy, the object of which is to determine economic *ideals*; art of political economy, the object of which is to formulate economic *precepts* (Keynes, 1890/1917, pp. 35 and 36). Roughly speaking, the branch ‘positive science of political economy’ in Keynes’s classification corresponds to the science branch ‘political economy’ in Mill’s system of knowledge.⁵

According to Keynes, economic science, in which ethical and pragmatic judgments are minimized and formal theories are developed, is separated from applied work, in which ethics plays an essential role:

In the first place, a sharp line of distinction is drawn between political economy itself and its applications to practice. [...] Economic laws are theorems of fact, not practical precepts. Political economy is, in other words, a science, not an art or a department of ethical enquiry. (Keynes, 1890/1917, pp. 12 and 13)

Note that for Keynes what separates positive economics from ethics is not the exclusion of issues related to ethics, but the absence of ethical judgments (Keynes, 1890/1917; Su, 2012, p. 387). It is in this sense possible to study economic uniformities without making ethical judgments. That separation gave rise to the positive-normative distinction. Keynes considers the distinction between economic science and its practical application desirable because he believed that with the separation ‘the social and ethical aspects of practical problems [...] are less likely to be overlooked or subordinated’ (Keynes, 1890/1917, p. 3). Hence, for Keynes making economic science a separate branch of economic enquiry is by no means an attempt to downplay the importance of ethics. On the contrary, it is to grant ethics a clearer role in the applications of economic science.

As was the case with Mill, Keynes also separated economic science from other social sciences by confining the scope of economic science into the study of the phenomena of wealth:

Economic facts are [...] influenced by social facts of very various kinds, and in their turn influence them; but it is nevertheless held to be possible up to a certain point to isolate the study of the phenomena of wealth from the study of other phenomena of society. Such isolation is indeed, said to be necessitated by the requirements of science, which always proceeds by analyzing concrete phenomena, so as to deal separately with their different aspects and the different elements of which they are composed. Economic science constitutes, therefore, a distinct, though not entirely independent, department of sociological speculation. (Keynes, 1890/1917, pp. 13 and 14)

Similar to Mill, Keynes is aware of the problem caused by the restricted scope of economic science, and hence he gives a warning about the limitations of economic theorems when applied to practice:

[F]ew practical problems admit of complete solution on economic grounds alone [...] when we pass, for instance, to problems of taxation, or to problems that concern the relations of the State with trade and industry, or to the general discussion of communistic and socialistic schemes – it is far from being the case that economic considerations hold the field exclusively. Account must also be taken of ethical, social, and political considerations that lie

outside the sphere of political economy regarded as a science. [...] If [...] the art attempts a complete solution of practical problems, it must of necessity be to a large extent non-economic in its character, and its scope becomes vague and ill-defined. (Keynes, 1890/1917, pp. 56 and 57)

To sum up, for Keynes, as for Mill, separating economic science out from ethics and other social sciences is desirable because it allows economic uniformities to be studied with scientific methodology. As to the limitation of economic science caused by the division, Keynes does not neglect it but leaves it to the other two divisions, which adopt methodologies other than a scientific methodology. In other words, in the Mill–Keynes tradition, economic science is only a small branch of economics broadly defined. Many contemporary concerns about treating economics as a science result from a misunderstanding of the positive–normative distinction in the classical tradition as if economics must be science, and nothing else. This misunderstanding has made many criticisms of the positive–normative distinction in the literature irrelevant to the positive–normative division in the Mill–Keynes tradition.

2. Robbins in context

Now that we have summarized the history of the positive–normative tradition, we turn to Robbins’s views on methodology. Our claim is that Robbins’s methodological views are best understood as a continuation of this Mill–Keynes tradition, not the imposition of a logical positivist tradition, as the conventional view suggests.

A significant reason why Robbins is usually interpreted as a follower of logical positivism is likely related to some of his statements in his classic treatise *Essay on the Nature and Significance of Economic Science* (Robbins, 1932). For example, he wrote:

Economics deals with ascertainable facts; ethics with valuations and obligations. The two fields of enquiry are not on the same plane of discourse. Between the generalisations of positive and normative studies there is a logical gulf fixed which no ingenuity can disguise and no juxtaposition in space or time bridge over. [...] Propositions involving the verb ‘ought’ are different in kind from propositions involving the verb ‘is.’ And it is difficult to see what possible good can be served by not keeping them separate, or failing to recognize their essential difference. (Robbins, 1932, pp. 148 and 149)

These passages have been interpreted as meaning that Robbins was denying that ethics can be useful to economic studies or can be rationally discussed.⁶ This reading is a misinterpretation of Robbins’s position because it interprets it in a logical positivist framework. For logical positivists, ethics is non-cognitive and meaningless. However, for Robbins, as for both Mill and Keynes, ethics is not meaningless; it plays an essential role in economic policy analysis.

This sharp contrast between the views concerning ethics held by logical positivists and Robbins is clearly supported by his own words. In the introductory chapter to his book *Political Economy: Past and Present*, Robbins explained his use of the term political economy in contrast to scientific economics. For him, political economy is ‘a discussion of principles of public policy in the economic field’ and ‘a search for solutions to problems of policy’ whereas scientific economics is a collection of ‘generalisations about the way in which economic systems works’ (Robbins, 1976, p. 3). The relation between the two is that political economy has to make use of the findings of economic science, rather than wishful thinking, to make recommendations for practice. The key to understanding Robbins is recognizing that for him, political economy is part of economics, but it is far more than a pure application of science. According to Robbins, it

involves assumptions which, in the nature of things, lie outside positive science and which are essentially normative in character. It consists of prescription rather than description. (Robbins, 1976, p. 3)

Robbins reiterated the importance of the distinction between scientific economics and political economy for interpreting his views in his Ely Lecture. In it he reaffirms his position stated in *Political Economy: Past and Present* regarding reviving the term political economy to designate the branch of studies which is concerned with economic policy (Robbins, 1981, pp. 7 and 8). Robbins also pointed out that this is not a new position but a position he constantly holds as far back as 1937. He wrote that he treated his book *Economic Planning and International Order* as ‘essentially an essay in what may be called Political Economy as distinct from Economics in the stricter sense of the word’ (Robbins, 1981, p. 8).

Robbins definitely did not exclude ethics out of economics broadly defined. As did Mill and Keynes before him, he merely allocates that part of economic analysis which requires ethics to the branch of economics which deals with policy and other practical issues, but not in the branch which deals with models and pure theory. For Robbins, ethics is crucial to economic policy analysis, but however important, it is not science. This position is consistent with Mill’s science-art distinction and Keynes’s tripartite division of economics and this is why we see Robbins in the Mill–Keynes tradition. Roughly speaking, Robbins’s economic science corresponds to the positive science of political economy in Keynes’s classification, and Robbins’s political economy corresponds to Keynes’s art of political economy.

One can best understand the Robbins’s goal in separating economic science from ethics by considering his first statement of his 1932 methodological views, which is to be found in his discussion of Hawtrey (Robbins, 1927). In it he criticized Hawtrey (1925) for claiming economic science supported his arguments when Robbins believed economic science did not support them. Robbins (1927) wrote

I do not think Mr. Hawtrey does justice to the real cause of the economist’s desire to keep his science free from the intrusion of ethical criteria. [...] It is not because we believe that our science is exact that we wish to exclude ethics from our analysis, but because we wish to confine our investigations to a subject about which positive statement of any kind is conceivable. (p. 176)

Thus, Robbins’s work is best seen as an attempt to stop economists from claiming that arguments that were based on economists’ own values were scientifically valid. This is also one of the main aims when Mill and Keynes respectively advocated for the separation of economic science from those branches of economic which should be seen as art.

Like Mill and Keynes, Robbins sees the pure science of economics as only a small portion of economic studies, and the theorems derived from economic science having severe limitations for policy applicability. For Robbins, the only part of economic analysis that could qualify as economic science at the time was the deductive study of logical arguments and models. As Howson (2004) quoting from notes of his lectures, points out, in Robbins’s view, all exact generalizations ‘are merely the explanation of the logical consequences of your initial assumptions. Given the assumptions and assuming a correct logic they are unassailable.’ She continued, referring to J.N. Keynes, ‘Pure economic analysis is simply a matter of exercises in logic, a matter of squeezing the utmost drop of implication out of assumptions which are given’ (Howson, 2004, p. 430). Because Robbins sees pure economics analysis as simply an exercise in logic, he does not consider that economic theory can be directly applied to policy, just as was the case with Mill and Keynes.⁷

Robbins's concerns about applying these logical deductions were quite different than the concerns of the logical positivists. He had little to say about the difficulties of testing theory since he believed it unlikely that any then-existing statistical tests would be conclusive. This meant that applied work for Robbins was not about testing the truth of the theory. It was about determining its applicability to a particular problem. That, for Robbins, was primarily a matter of judgment based on much more than economic science alone.

3. The Marshallian tradition and the loss of the Mill–Keynes methodological tradition

The Mill–Keynes position of defining science narrowly that Robbins was advocating did not last, and there were strong institutional pressures on economists to call their applied policy work 'scientific' (as there still are today). Ironically, Alfred Marshall, even though he was a follower of that tradition, played a significant role in its loss. The reason has to do with his role in changing the name of the economics field from political economy to economics. That change helped lead to a misinterpretation of this tradition because it did not highlight the particular interpretation of science as referring only to 'pure' science, which essentially limited it at the time to deductive models that had no direct relevance for policy. So whereas the Mill–Keynes tradition that Robbins followed carved out separate roles for economic science and art, Marshall did not. A likely reason for this was that for Marshall, all economics was art, and the pure science of economics was essentially empty. Since there was no pure science of economics, Marshall's engineering approach to economics, which would have been called art in the Mill–Keynes tradition, was called science by Marshall.⁸

In principle Marshall's definition of science should not have been of major consequence to economists, since Marshall would agree that his analysis is not science in the sense that Keynes was using science. Both arrived at the same conclusion: the applicability of pure economic theory to policy was minimal – drawing policy conclusions required ethical judgments. The Mill–Keynes tradition highlighted the difference by not calling policy analysis science. Marshall called it science, but saw science as being a realistic science, not pure science. But it did make a difference in that Marshall's different terminological use of science led to serious confusion about precisely what different individuals were saying since their definitions of science differed. It played an important role in the profession's misinterpretation of Robbins's methodological views (Colander, 2009).

The confusion developed over time. Initially, to distinguish the two different uses economists of the period distinguished 'pure' economics and 'pure' science (the concept of science in the Mill/Keynes/Robbins tradition) from a Marshallian concept of science as applied policy research – research that would be seen as art, not science, in the Mill–Keynes tradition.

An example of this usage can be seen in the Maffeo Pantaleoni's text, which he entitled *Pure Economics* (1889) and which was one of the first texts to structure the presentation of economics around maximization models. He writes 'Thus all questions pertaining to economic art, or Political Economy, are beyond its scope' (p. vii). He continues: 'This is a departure from the lines on which textbooks of economic science are usually prepared, their authors' objects being to equip the reader forthwith for the discussion of the most important economic problem as presented by everyday life' (p. vii).

A. C. Pigou, who was Marshall's student, also resolved the different uses of the term by distinguishing two types of science – a 'pure science' and a 'realistic science.' In his *The Economics of Welfare* (1920), he described the pure science of economics as light-bearing science, and realistic economics as fruit-bearing science. He explicitly stated that his focus was fruit-bearing science, not light-bearing science (Pigou, 1920, pp. 3–5). In Robbins's terminology, Pigou's realistic economics (which became the foundation of what would become welfare economics) would not be called science, but would be seen as part of the art of political economy.

Although the Marshallian approach and the Mill/Keynes/Robbins approach defined science differently, they were not methodologically incompatible, if one took account that they used different terminology. Specifically, both Marshall and his follower, A. C. Pigou, had discussions of how important it is to limit the claims one made about the implications of economic reasoning for policy. Following Mill, Marshall saw economic theory a set of tools, not rules, and argued that economists should avoid taking scientific authoritative positions on policy.⁹

In his *The Economics of Welfare*, Pigou was also circumspect about policy implications of his theory, and was quite willing to accept that his policy analysis included value judgments. He saw the concept of aggregate output as value laden – an engineering simplification that had to be justified when it was applied.¹⁰ It was not everywhere applicable. Pigou saw transfers of income from richer to poorer as welfare enhancing. Seen within the Robbins's definition of pure science, these were unacceptable blending of value judgments into science, but seen within the art of economics they were acceptable blends to Robbins. They were a type of heuristic needed in policy analysis.

If one sees Pigou's realistic science as a type of Keynes's art of economics or Robbins's political economy, not as pure science, there is little difference between their views of how policy analysis needs to be conducted in reference to theory. In his welfare economics Pigou was simply developing one approach that Keynes and Robbins said needed to be developed in the art of economics or political economy.

4. The Walrasian tradition and the evolution of welfare economics

The Mill–Keynes tradition began to wane in the 1930s as science came to be interpreted in a more logical positivist manner based on verifiable facts and empirical testing, not on unspecifiable judgments about the relevance of theory to a particular problem. As this happened the positive–normative distinction in economics lost its Mill–Keynes foundation, which separated out applied work from the positive science of economics. This allowed the distinction to be interpreted in a logical positivist framework, and subject to philosophers' appropriate criticisms.¹¹

In terms of applied economics, the connection between economic practice and logical positivist science within economics was short lived. Its high point was in the 1940s through the 1960s, as economists formally developed Pigou's welfare economics into a new welfare theory, without the proviso that it was 'realistic' economics, and hence belonging in the art, rather than pure science, of economics.

In making this connection in welfare economics, the economics profession did not follow either the Mill–Keynes tradition or the Marshall–Pigou tradition. Instead it blended the two into a third tradition in economics – the Walrasian general equilibrium welfare tradition. It is within that blending that serious problems arise. On the one hand, the Walrasian tradition adopted a pure science approach to the study of welfare economics. More specifically, the Walrasian tradition centered on a general equilibrium maximization

model, which is a model quite consistent with Robbins's deductive method. On the other hand, it adopted a Marshallian sense of science, where applied work was seen as part of economic science, not as an art to be separated from the pure science of economics. In other words, the Walrasian tradition used the methodology of science to study applied economic work and instead of seeing that model as highly limited in application it allowed the conclusions of the narrowly-defined scientific economics to be directly used as guidance for economic policy without the qualifications that the Mill/Keynes/Robbins tradition emphasized.

This new approach to applied economic policy, which had its early statement in Abba Lerner's *Economics of Control* (1944), saw policy advice in welfare economics as flowing directly from the science of economics, making it part of the positive science of economics, the part that supposedly did not include ethical or practical judgments, and not as part of the art of economics that, in the Mill–Keynes tradition, was where applied policy issues were considered.

These early attempts to establish a value-free scientific welfare economics based around Pareto optimality occurred in the 1950s. It was at this time that Davis's description of how economists stick to the positive-normative distinction in an indefensible way best fits the economics profession. But economists quickly moved away from that connection as it became apparent that it was impossible. I.M.D. Little (1950) attacked welfare economics in a well-received book, and Graaff (1957), in his famous study of welfare economics, put the nail in the coffin, concluding that 'the possibility of building a useful and interesting theory of welfare economics – i.e. one which consists of something more than the barren formalisms typified by the marginal equivalences of conventional theory – is exceedingly small' (Graaff, 1957, p. 169).

After Little's and Graaff's condemnation of any formal theory of welfare economics focused on Pareto optimality, the attempt to develop a value free welfare economics was essentially abandoned. This makes Davis's critique of modern economics for its use of Pareto efficiency as 'foundational to standard economic theory' (Davis, p. 13) seem off the mark, certainly in relation to any policy discussion.

In its place economists developed a theoretical social welfare function framework where the social welfare function allowed for the exogenous imputation of values into the analysis (Bergson, 1938, 1954). In the social welfare function approach, economists' theoretical goal in policy analysis was not to maximize output, but to maximize social welfare as specified in the social welfare function. This social welfare approach fully accepts that values related to goals of policy must come from outside the analysis. In theory the social welfare function allows for the imputation of society's, not economists' values into the analysis, which makes the economist simply a technician, studying how given values, one can most effectively achieve social goals. In the social welfare function approach, economists' policy analysis accepts those goals which come from outside of economics and tells society how to best achieve them given the facts and knowledge developed in the positive science of economics.

Davis also points out that the very concept of preference involves values. We agree, and thus we agree that in a deep philosophical sense the social welfare function does not get around Putnam's fact-value entanglement. But a Mill–Keynes methodology would fully accept that – and would respond that the economic theorist's role is primarily a technician's role; he or she develops information for others to use in their policy analysis. The economic theorist is not arriving at any conclusions about policy in the real world. Give the theorist another specification of preferences, or an alternative structure of analysis, and he or she will derive the logical implications. In the Mill–Keynes tradition, deductive theory is a crutch – it is not the truth.¹²

Methodologically careful economic theorists' methodological views are consistent with this tradition. For example, in a recent reflective piece, Rubinstein (2012) writes:

I would like to start with what I believe every academic should do when appearing in public, especially when speaking about political and controversial issues – to clarify the extent to which he is incorporating his professional knowledge in his remarks, when he is expressing views with the authority supported by academic findings, and what part of his comments are nothing more than his personal thoughts and opinions . . . to the best of my understanding, economic theory has nothing to say about the heart of the issue under discussion here . . . Because as an economic theorist, I would like to state that economic theory is exploited in discussion about current economic issues, and I don't like it . . . , to put it mildly.

Everything that I say here, even in an academic context (and I intentionally use the word 'academic' since I do not think that the word 'scientific' is appropriate for economics) is completely subjective, controversial and therefore perhaps describes me no less than it describes economic theory.

We find Rubinstein's position a restatement of Robbins' position, and of the Mill–Keynes tradition. Yes, there can be a positive economic theory, but the cost of achieving a positive economic theory is to accept that it has no direct relevance for real world policy discussions.

Making of normative judgments remains inevitable in theory and in policy analysis in the sense that economists still have to make judgments on which *means* should be taken to best achieve the given ends, but leaving the exploration of social welfare functions to other specialists indeed allows most economists to avoid making normative judgments about which *ends* should be taken. For instance, development economist P. Dasgupta takes this position and it explains why he insists that economists study positive facts, not ethical values (Dasgupta, 2005).

This development of the social welfare function approach managed to escape the more blatant logical and theoretical problems with the positive–normative theoretical divide, but it did not resolve the practical problems since the social welfare function could not be implemented in practical work. The result was that economists decreased their interest in welfare economics, and turned to other issues. Today, Pareto optimality and the welfare theorems are the topics that economic students are introduced to for a week or two in graduate school, but they are not topics that relate to the work-a-day concerns of applied economists.¹³ Their methodological interests turned elsewhere and as it did, what they meant by the positive–normative distinction changed.

5. The problem with modern economists' use of the positive–normative distinction

Most modern economists are not theorists, and as pointed out in Colander (2007), in recent times there has been a major shift away from theory to empirical work. As that has occurred, economists' conception of science has changed away from a focus on deductive theory to a focus on discovering facts through empirical studies. Today what economists generally mean when they say they are doing positive economics is that they are collecting and analyzing the data to determine robust empirical relationships that can help to guide policy decisions.

This empirical role of positive economics has little to do with testing economists' overall theory. Instead it concentrates on discovering 'facts' that can help to guide policy makers who, in principle, may hold any theory and any social welfare function. This contemporary empirical work has little or no relation to Pareto efficiency or preference. Hence, those problems raised by Davis are unlikely to resonate with most top recently-

trained modern economists whose research focuses on applied empirical work. They see their empirical work as guiding policy makers who are implementing society's social welfare function. In their positive work economists see themselves as technicians for society – carrying out theoretical or empirical analysis that can be used by anyone. It is this technical empirical work that economists discuss when they discuss methodology, and what they have in mind when they say they are doing positive economic analysis.¹⁴ They see themselves as studying 'what is,' not 'what ought to be,' and in principle their findings are 'honest broker' findings that are useful to any person interested in the issue.

This way of using the distinction is similar to the positive-normative distinction in Mill–Keynes tradition. It has little to do with the logical positivist fact-value divide. When economists say they are studying facts, they do not intend to claim that their research is free from values, just as Robbins did not intend to claim economic research is free from values. Davis recognizes this. For instance, he writes

the values Robbins really wanted excluded from economic science were those associated with ethics and morality. [...] the truly fundamental issue behind the idea of value neutrality is that ethical values such as what is morally good or right cannot be a part of a scientific economics. (Davis, 2014)

In our view, the problem with modern economists' use of the positive-normative distinction does not reside in the fact that they believe they are doing positive analysis. The positive-normative distinction itself is not the main problem. The main problem is that economists are not as nuanced about the limits of positive empirical analysis as is warranted. Too often they believe that economic science, if it can be called science, can tell the truth about facts. That strong belief is not consistent with the Mill–Keynes tradition. The Mill–Keynes tradition sees the theorems of economic science as true only in the abstract; modern economists too often treat the findings of empirical work as true in reality. That goes fundamentally against the Mill–Keynes tradition; in that tradition, empirical work would be aimed at sharpening precepts based on a combination of models and judgments, not at sharpening theorems based on models. Precepts are based on all dimensions of the problem, not just those that economists' theoretical model highlighted. From a Mill–Keynes perspective, current economic work gives far too much credence and direct policy relevance to economists' theoretical models and to empirical findings related to those models. It allows their findings which are highly contingent on limited theoretical models and limited empirical support for those models to be used in policy analysis without a careful consideration of the numerous assumptions that went into making the model.

In contrast, the Mill–Keynes tradition suggests that it is necessary to consider all the other elements that were excluded from the discussion of economic science when moving from the conclusions of abstract science to policy analysis. It recognizes that drawing any conclusion requires going beyond economics, and including political, social and cultural factors in the analysis. In the Mill–Keynes tradition, moving from the conclusions of positive empirical studies to normative policy prescriptions is not a work of science but a work of art, a division of economics lost in the contemporary use of the positive-normative distinction.

6. Conclusion: the way forward

Let us briefly summarize. As should be clear from our analysis, we agree with both Davis and Putnam that economists' current usage of the positive-normative distinction is highly problematic. Where we disagree is in our view of (1) where that distinction comes from,

and (2) how we can best encourage economists to do better. We see the distinction as following from a pragmatic Mill/Keynes/Robbins tradition that emphasizes the limitations of theory and empirical work in providing scientific grounding for policy. This tradition has as many problems with logical positivism as do Putnam and Davis.

This difference leads to our second point of disagreement – the way forward. Davis sees correcting economists' usage as almost hopeless for behavioral reasons. We are more optimistic. We see the way forward as explicitly removing the positive-normative distinction from the logical positivist tradition and reintegrating it with the Mill–Keynes tradition within which it developed. Since that tradition emphasized the limits of theory and of empirical testing, and puts researchers on guard against slipping in their value judgments in the guise of 'scientific' economics, it is consistent with what we interpret as Davis's and Putnam's goal – to reduce the amount of scientific claims made for any economist's particular view or work.

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Notes

1. See also Putnam (2003, pp. 395–~~and~~ 396).
2. More precisely, economics as a science is a branch of political science. They both are the scientific foundation of practical politics, or the art of government. See Mill (1844/1967, pp. 320–321).
3. Mill uses the art of mechanics to demonstrate this point. See Mill (1844/1967, p. 312).
4. For a brief discussion of the relationships between different sciences and arts in Mill's system of knowledge, see Su (2013, p. 30).
5. Beyond this separate branch of economic science, how Keynes's normative science of political economy and art of political economy correspond to Mill's art and other branches of social science is less straightforward, even though one can still find the matching relations.
6. For a brief review of the methodological critique of Robbins's *Essay*, see Scarantino (2009, pp. 457–463); See also Su and Colander (2013).
7. We should note that that there are differences between the subject-matter and content of Mill's and Robbins's economic science, even though both adopt deductive methods for their economic analysis. We agree that it is arguable whether the subject-matter which Robbins believed economic science should focus on is or is not appropriate. But that issue is not our focus in this article. Our focus here is it that the spirit of separating economic science from ethics is similar for Mill, Keynes and Robbins, and that therefore Robbins's methodological views can be usefully seen as being within the Mill–Keynes methodological tradition, even though the scope of his analysis differed from theirs.
8. Marshall's views about separating out a separate art of economics changed over time. A good example of this was pointed out to us by an anonymous reviewer who referred us to an article by Royden Harrison (Marshall & Harrison, 1963). In that article Harrison reprinted some 1874 papers by Marshall that strongly argued the need for separation of policy conclusions from theory. Harrison notes that in later years Marshall 'came increasingly to resent the restraints which science obliged him to place upon his own propensity to moralize' (p. 430). In later writings Marshall, while still arguing that economists should not give advice based on economic reasoning alone, paid less attention to the art/science distinction.
9. He writes
Of course an economist retains the liberty, common to all the world, of expressing his opinion that a certain course of action is the right one under given circumstances; and if the difficulties of the problem are chiefly economic, he may speak with a certain authority. But on the whole, though the matter is one on which opinions differ, it seems best that he should do so rather in his private capacity, than as claiming to speak with the authority of economic science. (Marshall, 1890/1995, pp. 109–110).

10. He writes

The preceding discussion makes it plain that any rigid inference from effects on economic welfare to effects on total welfare is out of the question. In some fields the divergence between the two effects will be insignificant, but in others it will be very wide. Nevertheless, I submit that, in the absence of special knowledge, there is room for a judgment of probability. When we have ascertained the effect of any cause on economic welfare, we may, unless, of course, there is specific evidence to the contrary, regard this effect as *probably* equivalent in direction, though not in magnitude, to the effect on total welfare; and, when we have ascertained that the effect of one cause is more favourable than that of another cause to economic welfare, we may, on the same terms, conclude that the effect of this cause on total welfare is probably more favourable. In short, there is a presumption – what Edgeworth calls an ‘unverified probability’ – that qualitative conclusions about the effect of an economic cause upon economic welfare will hold good also of the effect on total welfare. This presumption is especially strong where experience suggests that the non-economic effects produced are likely to be small. (Pigou, 1920, p. 20)

11. Friedman (1966) famous methodology essay shows the change. In it he cited J.N. Keynes as the source of the positive-normative distinction, but after citing Keynes as the source made no reference to Keynes’s ‘art’ branch (Colander, 1992). In doing so he played an important role in connecting economists’ positive economics with logical positivism. Friedman (1966) writes:

Its [positive economics] task is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances. Its performance is to be judged by the precision, scope, and conformity with experience of the predictions it yields. In short, positive economics is, or can be, an ‘objective’ science, in precisely the same sense as any of the physical sciences. (p. 4)

12. Whether technological advances in formal statistical testing and empirical work could make it so that some deductive theory could become accepted as a scientific truth is an open question. Each of these writers had serious concerns about the limits of empirical work, and did not see it as being able to provide a formal scientific demarcation of good and bad theory. Whether their views would have changed as technology changed is a complicated subject that we do not address in this article.

13. The declining status of welfare economics in economics profession was noted by Atkinson (2001) in his article ‘The Strange Disappearance of Welfare Economics’. For a believer in the Mill–Keynes tradition, this disappearance is seen as a good thing because in its development in the second half of the twentieth century, welfare economics has been treated as the ‘scientific’ branch, rather than ‘art’ branch of economics. As a consequence of this, the concept of welfare in welfare economics is poor and it failed to provide practical guidance about how economists should go about doing applied policy economics to enhance the welfare of society. Much of the new welfare economics literature provides only mathematical formula without concrete content.

14. See, for example, Angrist and Pischke (2010). They believe that economists are attempting to use the best research design methods available, just as scientists do in any field of study.

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