

# **Pragmatism, Knowledge, and Economic Science: Deweyan Pragmatic Philosophy and Contemporary Economic Methodology**

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## 0. Introduction

This paper will examine the relationship between pragmatism – specifically the classical pragmatism of John Dewey – and economic methodology. I will argue that while pragmatism was relatively ill-suited for the self-defined tasks of mid-twentieth century economic methodology, those tasks have changed – in particular, substantially broadened – during the last few decades, and the changes that have taken place allow for pragmatic ideas to play a more important role in contemporary methodological debates than in the debates of a previous generation. In a sense the changes that have taken place within the field of economic methodology simply mirror substantive changes that have taken place within science theory more generally, and in order to understand the opportunity that currently exists for a pragmatic approach to economic methodology, it is necessary to understand the corresponding changes within contemporary science theory.

The paper is divided into three parts. The first section discusses the changes that have taken place within science theory during the closing decades of the twentieth century and how these changes accommodate, and have increasingly allowed for the re-emergence of, pragmatic philosophical ideas. While it is important to understand these general developments, the discussion

in this section will be relatively brief; in part because a thorough examination of such a wide-ranging subject would carry us far beyond the scope of the current paper, but also because I have previously examined these issues in more detail (Hands 2001a). The second section turns from science theory in general to economics and economic methodology in particular. While recent developments within general science theory have reopened the door to pragmatic philosophical ideas, there are also a number of features specific to economic science that make its methodology particularly accommodating to the pragmatic turn. A few of these economics-specific features will be the focus of the second section. The third section considers Dewey's political economy, focusing particularly on the fact that Deweyan ideas within economic methodology (the subject of the second section) can be separated from Dewey's particular ideas about the economy. While this topic certainly deserves a more careful examination, the purpose of section three is simply to make it clear that these are two very different sets of arguments and concerns. The final concluding section briefly summarizes the argument and reflects more generally on the subject of economics and pragmatic philosophy.

1. The Pragmatic Turn in Contemporary Science Theory

The so-called Received View of scientific knowledge – or what Philip Kitcher (1993) aptly termed "Legend" – is of course far behind us. Not only does it no longer have the status of a "received" view, the empiricist-foundationalist

version of the Legend that once dominated Anglo-American philosophy of natural science is increasingly being written-out of the disciplinary history of modern philosophy. According to Nancy Cartwright, Thomas Uebel, and others (Cartwright, Cat, Fleck, and Uebel 1996; Uebel 1992) Otto Neurath never endorsed such a view; Michael Friedman (1999) adds another big-name positivist, Rudolf Carnap (and to a lesser extent Moritz Schlick), to the list of dissenters; and Malachi Hacoheh (2000) joins other Popperians who deny that Karl Popper ever advocated anything like the Legend view of scientific knowledge. To add to the confusion and disaffiliation, not only are most of the names being scratched off the membership roll of the Received View, the individual that had previously been given most of the credit for overthrowing the Legend - Thomas Kuhn - is now being described as much less revolutionary than previously believed (Fuller 2000). Despite these recent changes in the genealogy of the Received View, it remains the case that there was a fairly strong consensus within mid-twentieth century Anglo-American philosophy of natural science; it was positivist-inspired and broadly empiricist-foundationalist in epistemological focus; and it is now gone.

Of course there is more to science theory than the philosophy of natural science, and it is clear that alternative approaches to the subject of scientific knowledge have experienced an exponential growth during the years since the fall of the Legend. The sociology of scientific knowledge (including, but not restricted to, the Strong Program and Social Constructivism), Actor Network

Theory, Reflexive Science and Technology Studies, Feminist Epistemology, various naturalistic approaches (including, but not restricted to, those drawing on evolutionary biology and cognitive science), the Rhetoric of Science, and even a few attempts to analyze the activities of natural scientists in terms of economic theory (what I have previously termed the Economics of Scientific Knowledge: Hands 1994a), are but a few of the many post-positivist, but not philosophy of science-based, approaches to scientific knowledge that have emerged within the contemporary literature. While a small number of these views emphasize the radical debunking of the epistemic standing of science, most are not intent on undermining the cognitive position of scientific knowledge or the social position of the scientific community. For most contributors to the vast literature on contemporary science theory, the goal is still to understand the unique cognitive virtues of science; it is just that the Legend's demise has significantly transformed the framework, or intellectual terms of engagement, for arriving at such understanding. In general, most investigators are seeking some form of middle ground between the Received View and relativism; science is cognitively special, but it is not special because it can be justified on the basis of some (or any) version of empiricist-foundationalist philosophy of science.

Given the a wide array of different approaches, interests, and concerns that are currently at work within science theory, it is very difficult to identify a small set of key features that adequately summarize this post-Legend literature. Nevertheless, despite these vast differences, if one paints with a relatively wide

brush, it is possible to identify a few, very general family resemblances that can be discerned among the wide variety of competing perspectives (at least among those that are actively seeking some kind of middle ground). I will mention four such family resemblances.

Perhaps the most important is that science is fundamentally social and must be understood in social terms. There are many different competing views about what it means to say that science is social – what "social" means, what sociality implies about scientific knowledge, scientific behavior, or scientific culture, as well as how it affects the proper approach to investigating science – but there is a general consensus that the social character of the scientific enterprise is fundamental to scientific knowledge and that any adequate view of scientific knowledge will need to recognize this sociality in a substantive way.

A second point of relative consensus concerns the way that one must approach the subject of scientific knowledge; again there is a vast array of specific approaches, but they all consider the actual practice of science to be essential to understanding scientific knowledge. For some this means studying the history of great science, for others conducting anthropological investigations of contemporary site-specific scientific practices, for still others examining the general characteristics of scientific culture, but in any case armchair a priori philosophizing about the essential character of scientific knowledge is no longer sufficient for the job of doing science theory (even among philosophers of natural science).

The third feature, and one that is clearly related to the previous two, is an inclination towards pluralism. This pluralism can also take a variety of different forms depending on the author's particular philosophical focus; but in almost every case, despite the wide variation in detail, there seems to be the agreement that science is not a single homogeneous thing, but a heterogeneous cluster of things (and for many authors an unstable and shape-shifting cluster of things). There may be broadly identifiable features of the behavior of scientists – or of the culture of science, or of the institutional structure of scientific communities – that differentiates scientific activities from other aspects of human culture, but they are generally recognized as much broader, more permeable, and more flexible, than the "demarcation criteria" traditionally provided by the philosophy of science. Science is many things, not one thing.

The fourth characteristic of science, and one that seems to be more controversial, is the emphasis on naturalism. There are a variety of ways that naturalism is interpreted within the contemporary literature, but in general it is the idea that science, or the scientific approach, should be employed in the investigation of scientific knowledge; that epistemological questions should be approached in some sense, like scientific questions. This might mean that insights from cognitive science regarding human belief acquisition, or biological models of evolutionary change, are employed in the investigation of how scientific beliefs are acquired or stabilized within the scientific community; it might be simply the idea that scientific knowledge is a phenomenon to be

studied scientifically like any other natural phenomenon; or it might be the argument that since contemporary science seems to be so much more stable and reliable than contemporary philosophy, it is the latter that should be judged by the standards of the former (rather than vice versa) – but in any case science will be employed in the investigation of scientific knowledge.

Given these general features of, or family resemblances within, contemporary science theory, the revival of pragmatism is no surprise; these characteristics represent fertile ground for the germination of pragmatic ideas. Consider first the very idea that scientific knowledge is special and yet not justified on the basis of some version of foundationalism. This is exactly the characterization of scientific inquiry within classical pragmatism. Despite their differences on many subjects; Peirce, James, and Dewey all agreed that beliefs fixed by intelligent scientific means possessed value that was not possessed by beliefs fixed by other means (tradition-authority, tenacity, ... ) and that the world would be a better place if more beliefs were formed intelligently; and yet all three would also agree that philosophical positions that sought to "ground" knowledge on the basis of some set of absolutely certain, incorrigible, epistemological "foundations" (sensory, rational, or other) were an absolute dead end: not only a failure, but socially pernicious. Pragmatists not only believed that the scientific form of life was virtuous and sought to extend it into other areas of human culture, they also agreed that one of the main barriers to that extension was the foundationalist epistemic vision (or short-sightedness) that had dominated



Western philosophy since the Greeks. For Dewey in particular, the origin of the idea that the fundamental philosophical problem was the question of mental "representation" - the mirror metaphor that asks how our thoughts and beliefs can accurately reflect an independent, objective, nature "out there" - was to be found in Greek slave society where the purified, true, and universal objects of knowing (by the elite) were radically separated from the earthly, instrumental, and practical objects/activities of doing (by slaves). The result was a spectator theory of knowledge: "the model of a spectator viewing a finished picture rather than after that of the artist producing a painting" (Dewey 1948, pp. 122-3).

Western philosophy amounts to little more than one very long and unproductive excursus on this essentially representational characterization of the fundamental philosophical question. So for classical pragmatism science was something special to be encouraged, but the spectator theory of knowledge (and thus the philosophy of science contingent upon it) needed to be overthrown; this view is shared by most contributors to contemporary science theory.

Not only does pragmatism sit comfortably with the general tenor of the current problem situation within the various fields that study scientific knowledge, it also shares the four more specific features listed above. The classical pragmatists all held that scientific knowledge (intelligence) was fundamentally social. While there were differences in detail - with Peirce perhaps going the farthest in extending sociality to a metaphysical vision - they all viewed the particular features that allowed for the development and

extension of scientific intelligence (or instrumental reason, or cause-and-effect thinking, or experimental inquiry, ... ) to originate in, and be affected by, the inexorably social nature of human society and human existence. In Dewey's own words:

... philosophy held that ideas and knowledge were functions of a mind or consciousness which originated in individuals by means of isolated contact with objects. But in fact, knowledge is a function of association and communication; it depends upon tradition, upon tools and method socially transmitted, developed and sanctioned. Faculties of effectual observation, reflection and desire are habits acquired under the influence of the culture and institutions of society, not ready-made inherent powers. (Dewey 1927, p. 158, emphasis added)

So too there exists convergence regarding the second and third features, attention to the actual practice of science and pluralism. Of the three – Peirce, James, and Dewey – only Dewey lacked training as a scientist, and all three viewed their philosophical endeavors as an application of experimental reasoning gleaned from the actual practice of successful science: that their philosophical conclusions depended "upon an analysis of what takes place in the experimental inquiry of natural science" (Dewey 1929, p. 168). Obviously James and Dewey were committed pluralists (Peirce is more controversial); James is even credited with introducing the term "pluralism" into English-language philosophy (Menand 2001, p. 143). Not only were they some kind of pluralists – a term, of course, with a wide variety of meanings – Dewey in particular, was a pluralist in essentially the way that pluralism has emerged within post-Legendary science theory. He separated the scientific attitude from the subject

matters of the various sciences, and insisted that the scientific method did not imply there was but one science: "In the house which science might build there are many mansions" (Dewey 1970, p. 34).

Finally, there is the issue of naturalism, and here too the perspective of classical pragmatism corresponds nicely with contemporary developments. Although not every classical pragmatist endorsed "naturalized epistemology" in the narrow contemporary sense, they were all certainly naturalists in the broader sense of regarding human knowledge and intelligence as something to be explained as one would explain any other object of interest (i.e., scientifically). It is also clear that certain pragmatists (Dewey in particular) often did employ evolutionary biology in a more narrow sense – like contemporary "evolutionary epistemologists" (see Bradie 1986 for a survey) – as a naturalizing "base" for the characterization of human knowledge in general. Intelligence in the human mind has evolved, like any other feature of the human anatomy, to help us cope with our environment. Knowledge – like fins, horns, or an opposable thumb – is not about accurate mental representations; it is about helping us get on in the world.

As Louis Menand summarizes Dewey's position:

Philosophers, Dewey argued, had mistakenly insisted on making the problem of the relation between the mind and the world, a obsession that had given rise to what he called "the alleged discipline of epistemology" – the attempt to answer the question, How do we know? The pragmatist response to this question is to point out that nobody has ever made a problem about the relation between, for example, the hand and the world. The function of the hand is to help the organism cope with the environment; in situations in which a hand doesn't work, we try something else, such as a foot, or a fishhook, or an editorial. ... Dewey thought that

ideas and beliefs are the same as hands: instruments for coping.  
(Menand 2001, pp. 360-61, emphasis in original)

## 2. Pragmatism and Economic Methodology

Even if much of classical pragmatism is consistent with many of the recent developments within general science theory – or perhaps a different way of characterizing the situation is to say that science theory is now in a position to accept many of the pragmatic ideas from the late 19th and early 20th century – this still leaves open the specific question of the relationship between pragmatic ideas and economic methodology. Are there specific ways that pragmatism is relevant to the field of economic methodology that go above and beyond the simple fact that pragmatism connects up with recent debates within science theory and economics is a social science?

In a sense, the most immediate answer to the above question is "No." Economic methodology, at least as it has traditionally been defined, does not emphasize sociality, plurality, naturalism, or any of the above features that linked pragmatism to the recent developments within the general theory of scientific knowledge. At least during the latter half of the 20th century, economic methodology focused primarily on finding a small set of relatively simple rules for the proper conduct of economic science – 3"x5" card philosophy of science (McCloskey 1998) – and the philosophical resources involved in the search for these simple rules generally came from the Received View: or a Popperian falsificationism not easily distinguished from it (see Blaug 1992 for instance).

This traditional view of economic methodology – what I have called the "shelf-of-scientific-philosophy" view of economic methodology (Hands 1994b) – is basically an exercise in taking various ideas off the philosophy of natural science "shelf" and then applying them to the science of economics; during the course of such exercises it was generally assumed that the items on the shelf were: small (3"x5" card), relatively easy to apply (simple rules of demarcation), effectively ready to use (no assembly required), applicable to the behavior of individual economists (individual, not social, in character), and that they provided a suitable philosophical justification for the epistemic quality of the resulting scientific product (provided solid epistemological foundations).

Pragmatism does not really help if one is searching for such simple, universal, rules for the proper conduct of economic (or any other) science. Dewey was perhaps the classical pragmatist who came closest to such concerns, but even his view of experimental inquiry most certainly did not focus on the identification of a few simple rules for the proper behavior of individual scientists. While Dewey did exclude certain ways of thinking/acting from the realm of scientific intelligence, his characterization of the scientific "method" was extremely latitudinarian (Westbrook 1991, p. 142) – simply the method "of analytic, experimental observation, mathematical formulation and deduction, constant and elaborate check and test" (Dewey 1927, p. 164) – and he clearly (and self-consciously) did not provide anything that would fit on a 3"x5" card, offer

any strict rules, or guarantee that the resulting knowledge was grounded in epistemically incorrigible foundations.

Fortunately for this discussion, recent economic methodology has substantially broadened its focus and it now looks a lot more like contemporary science theory than the 3"x5" card methodology of a few years ago. Without rehashing the entire story – it is discussed in detail in Hands 2001a and 2001b – the bottom line is that the same issues and concerns that have affected science theory in general have also affected methodological inquiry about economics. But while they are certainly important, these changes are not the whole story about the relationship between pragmatic philosophy and economic methodology. Economic methodology has substantially broadened its focus; it is now concerned with the social character of the discipline, the actual practice of the economics, various pluralist issues, and is (more) naturalistic; but pragmatism and economics connect up in a number of different ways that go beyond, and actually existed prior to, the recent convergence of economic methodology, general science theory, and pragmatic philosophy. Let me just briefly discuss three of these specific features.

First, pragmatism fundamentally connects scientific rationality and economic rationality; for pragmatism economic interests are not one thing and epistemic interests something else. The view of knowledge that pragmatism sought to replace characterized knowledge as a particular kind of individual mental representation – a perfect/privileged representation – of objects

independent of human interests and concerns. For pragmatists of course, knowledge is inexorably intertwined with those human interests and concerns; "knowing about" and "doing with" are two sides of the same coin. Such a view moves human interests, including economic and industrial interests, immediately onto the epistemic center stage. Knowledge in industry is not fundamentally different than knowledge in science.

In principle, the history of the construction of suitable operations in the scientific field is no different from that of their evolution in industry. Something needed to be done to accomplish an end; various devices and methods of operation were tried. Experiences of success and failure gradually improved the means used. (Dewey, 1929, p. 124)

I would note that one particular example of the pragmatic convergence of scientific and economic rationality is provided by Peirce's explicitly microeconomic cost-benefit analysis of the process of scientific decision making (Peirce 1879), but Peirce's work on the economics of science is just one, perhaps a rather extreme, example of this connection. The linkage between scientific knowledge and economic interests is not something that just emerges in the work of a single author or in a few papers, it is a general characteristic of all pragmatic philosophy.

The second deep and long-standing connection between economic methodology and pragmatic philosophy involves the fact that for pragmatists the scientific way of thinking applies to the social and moral sciences, not just natural science. Focusing specifically on Dewey, one might respond that the potential

inclusion of social sciences like economics into the domain of scientific intelligence is simply an implication of the pluralist or latitudinarian nature of Dewey's position: "there is no kind of inquiry which has a monopoly of the honorable title of knowledge" (Dewey, 1929, p. 220). While Dewey's pluralism certainly does prevent him from defining scientific knowledge solely in terms of natural science, the desire to subsume social and economic analysis under the rubric of science runs much deeper than merely the fact that experimental reasoning is not restricted to the natural sciences. The goal of applying the experimental reasoning characteristic of natural science to other aspects of human social life is the driving force behind Dewey's (and most pragmatists') philosophizing. For Dewey many aspects of modern life are governed by instrumental scientific rationality, but many others – our values – are viewed as originating elsewhere: in God, in nature, in spirit/soul, in rite and cult (Dewey 1929, p. 223). The result is a crisis of culture that defines the philosophical problem.

Man has beliefs which scientific inquiry vouchsafes, beliefs about the actual structure and processes of things; and he also has beliefs about the values which should regulate his conduct. The question of how these two ways of believing may most effectively and fruitfully interact with one another is the most general and significant of all the problems which life presents to us. (Dewey 1929, pp. 18-9)

If scientific inquiry is not relevant to questions of social life and social values the separation of these two aspects of culture – and the associated crisis – will remain with us. Pragmatic philosophy can, and for Dewey should, serve an



emancipatory role within the process of social reconstruction, but in order to do so it must affect the values that individuals hold. But these values are products of the social environment, and thus in order to succeed pragmatic philosophy must hook-up effectively with social life; the most significant hooks for pragmatic philosophy and social life, are the social and moral sciences. Philosophy that says nothing about social life leaves our practical (instrumental, experimental, scientific) life separated from, and in tension with, our most cherished values. Such a philosophy is part of the problem; pragmatism intends to be part of the solution.

The third connection is that for Dewey in particular, the experimental form of life has grown up and begun to assert itself, along with economic development and industrial progress. As mentioned above, Dewey attributed the representationalism characteristic of Western philosophy to the economic conditions of Greek society (slavery), but the relationship between economic institutions and scientific reasoning did not end with the Greeks. The slow but systematic inroads that experimental reasoning made into Western life were accelerated by the industrial revolution and economic progress; industrial rationality and scientific rationality grew up together. As Dewey explained the process:

New-found wealth, ... tended to wean men from preoccupation with the metaphysical and theological, and to turn their minds with newly awakened interest to the joys of nature and its life. ... The demands of progressive production and transportation have set new problems to inquiry; the processes used in industry have suggested new experimental appliances and operations in science;

the wealth rolled up in business has to some extent been diverted to endowment of research. The uninterrupted and pervasive interaction of scientific discovery and industrial application has fructified both science and industry, and has brought home to the contemporary mind the fact that the gist of scientific knowledge is control of natural energies. (Dewey 1948, pp. 40-2)

While it is clear that Dewey thought of experimental rationality – not the economic, particularly market, institutions – as the prime mover; it is also quite clear that he believed the two developments were substantively related. The growth of science facilitated the industrial revolution, which in turn precipitated changes in economic (and other social) institutions, which in turn can (though for Dewey, need not always) further accelerate the growth of experimental rationality. This is not (as we will see in the next section) an argument for linking the spread of scientific rationality to the spread of capitalist-market institutions, but it certainly is yet another example of how deeply intertwined experimental reasoning and economic relations were for Dewey (and to a lesser extent other pragmatists). Compare this to the Received View and the shelf-of-scientific philosophy characterization of economic methodology, where scientific knowledge is something that is produced when individual scientists follow the foundationalist-inspired rules laid down by philosophers of science, and then economics enters at the very end, with the only question being whether it is, or is not, capable of living up to the philosopher-decreed scientific standards. With pragmatism there is no such caricature; knowledge evolves through its associated doing, and doing is what economic life is all about.

### 3. Deweyan Economic Methodology and Dewey's Economics

Today when economists, and for that matter most others, refer to the economy and economics, they are normally referring to the market: market prices, market institutions, and production for profit by business firms.

Economists of course discuss a variety of other topics, but there certainly is the general presumption that what gets produced in the modern economy is produced for sale in markets by profit maximizing business firms. This presumption rests in part on the belief that market-oriented relations of production and distribution in fact (now) prevail in most of the world, but also, and perhaps more importantly, on the belief that such relations constitute a rational, and for some, even a natural way of organizing economic activity.

While Dewey would have agreed with the first part (the fact of market institutions), he would not have agreed with the argument that such arrangements are either rational, or natural. For Dewey, production for profit and the associated institutions of industrial capitalism were neither rationally-scientifically designed, nor "natural" in Adam Smith's sense. For Dewey, the ownership rights and institutional arrangements of capitalism are simply hold-overs from feudal social conditions: "chargeable to the unchanged persistence of a legal institution inherited from the pre-industrial age" (Dewey 1927, p. 109).

Industrial arrangements could be determined by the (democratic) application of scientific intelligence – the extension of experimental reasoning to social and

economic life – but were not in his day (and Dewey would say, still are not today); rather than being socially applied, the technical applications of science "are utilized by those in positions of privileged advantage to serve their own private or class ends" (Dewey 1929, p. 252). While never sympathetic to Marxism, Dewey clearly supported a version of democratic socialism and economic planning; he endorsed the application of science and technology to industrial production, but not the private control of that technology in the hands of business owners who used it to produce goods for sale at a profit. Dewey's political economy was, as is generally recognized, very close to the American Institutionalism of Thorstein Veblen and later Veblenians such as Clarence Ayres (see Hands 2001a, pp. 231-5 for a discussion of this connection).

Dewey's political economy raises an obvious question. Since the first two sections of this paper argued that Dewey's pragmatic ideas had much in common with the major themes of contemporary science theory, and that there are independent reasons to connect pragmatism and economic methodology, the question is: Does endorsing an economic methodology informed by Deweyan pragmatic ideas, necessarily commit one to endorsing Dewey's particular political economy?

This is a very complex question that frankly deserves a lot more attention than I can give it here, but I want to suggest a few reasons why the answer might be "no." There are tensions between Dewey's philosophical position and his political economy, and when these tensions are viewed from the perspective of

contemporary debates within philosophy, science theory, political economy, and our general intellectual culture, there seems to be much more reason to support Dewey on the philosophy side of the tension than on the economic side. This said, it is important to emphasize two points. First, I am not suggesting that the tension between Dewey's pragmatism and his economics is any more, or any worse, than the tensions exhibited in the work of any other wide-ranging intellectual with substantive philosophical and social/economic ideas; and second, consistent with a general commitment to pragmatism, leaning in the direction of one side of the tension at this particular time, in this specific social context, and in this cultural environment, says absolutely nothing about what the better pragmatic choice might be at a different time, in another context, or an alternative environment. I will briefly consider three such tensions; they are closely related, but clearly separable.

First, there seems to be a tension between Dewey's pragmatic instrumentalism – with its fallibilism, context-sensitivity, and anti-teleology – and his acceptance of the idea that it is possible to engage in wide-scale social engineering and economic planning. The amount of information one would need for such planning seems to be precisely the type of universal and certain knowledge that Dewey denies intelligence provides (and finds pernicious to suggest exists). It seems problematic to be against the quest for certainty, and yet to be for a type of economic planning that requires it. As John Patrick Diggins explains the tension:

During the depression Dewey criticized the New Deal for lacking purpose, direction, and systematic social control. The public philosophy and the good society could only be, he was convinced, a society of applied intelligence, a "great community" scientifically planned, designed, organized, and managed along with citizen participation. The irony here is that Dewey's epistemology could give little support to his politics. ... Dewey's idea of rational social control could scarcely take account of the uncertainty, obscurity, and paradoxes inherent in reality itself. Convinced that a planned society was within human conception and design, he claimed cognitive abilities in politics that his epistemology denied in philosophy. (Diggins 1994, pp. 304-5)

The second tension begins with the previous point about the pragmatic view of natural science and Dewey's view of social science, but puts a slightly different spin on it. The spin involves criticizing not Dewey's social science, but rather his general methodological view of social science. Dewey (consistent with contemporary science theory) clearly sees science as social, but he seems to draw from this fact the additional (invalid) inference that whatever the general experimental approach says about the method of natural science applies equally well to social and economic phenomena. He seems to deduce "social problems can be solved by the (natural) scientific method" from "science is social," when in fact these two things are entirely separate. This criticism was raised by Frank Knight (1936) and is certainly consistent with the ideas of the Austrian tradition in economics (among others); in a sense it is the criticism that Dewey was not sufficiently pluralist. Dewey's desire to think of the scientific-experimental method in ways that would allow it to be applied to social, economic, and cultural life, seemed to block him from seeing any possibility of there being

aspects of human and social life that are not amenable to the experimental method. It is possible to agree entirely with Dewey's general view of science – particularly the social character of science – and yet not agree that all social and economic problems can be solved, or even approached, by the application of the method of intelligence derived from the natural sciences. As Knight characterized the problem:

Professor Dewey's theories of liberalism and his program for its salvation go definitely and catastrophically wrong. He seems to confuse the unquestionable fact that scientific and technological knowledge is in a fundamental sense social in genesis and transmission with the view that this style of intelligence is applicable to social problems, which is the antithesis of the truth. (Knight 1936, p. 231)

Even if one disagrees with Knight's claim that such applications are "the antithesis of the truth," there does seem to be a problem with Dewey's jump from the sociality of scientific knowledge to his belief in the general applicability of instrumental rationality to social and economic problems.

The third tension I would like to discuss concerns Dewey's treatment of "natural laws" in physical science versus his treatment of such laws in social and economic science. Dewey argues that a pragmatic conception of knowledge not only undermines the notion that physical laws are absolute, universal, and representationally true, it also undermines the notion that social and economic laws are "natural laws" with these same features. For Dewey what happens in society is a result of human will, intention, agency, and values; neither physical nor social laws are "out there," universal, and independent of human purposes.

The quite reasonable conclusion that he draws from this is that undermining the purported natural basis of such economic laws undercuts the intellectual grounds for laissez-faire inherited from 18th century political economy. As he explains:

Its paralyzing effect on human action is seen in the part it played in the eighteenth and nineteenth century in the theory of "natural laws" in human affairs, in social matters. These natural laws were supposed to be inherently fixed; a science of social phenomena and relations was equivalent to discovery of them. Once discovered, nothing remained for man but to conform to them; they were to rule the conduct as physical laws govern physical phenomena. They were the sole standard of conduct in economic affairs; the laws of economics are the "natural" laws of all political action; other so-called laws are artificial, man-made contrivances in contrast with the normative regulations of nature itself.

Laissez-faire was the logical conclusion. For organized society to attempt to regulate the course of economic affairs, to bring them into service of humanly conceived ends, was a harmful interference. ... But if man in knowing is a participator in the natural scene, a factor in generating the things known, the fact that man participates as a factor in social affairs is no barrier to knowledge of them. On the contrary, a certain method of directed participation is a precondition of his having any genuine understanding. Human intervention for the sake of effecting ends is no interference, and it is a means of knowledge. (Dewey 1929, pp. 211-12)

So Dewey's pragmatism replaced the Newtonian conception of "natural" physical laws and therefore undercut the justification for laissez-faire based on such a Newtonian-based conception "natural" economic laws. So what is the tension? The tension surfaces in the way that Dewey applies these discredited laws; what we are supposed to do, or not do, with these laws once their philosophical foundations have been successfully devitalized. When it comes to



Newtonian physics, or any other theory within the natural sciences, the fact that we reject the traditional philosophical justification for, and explanation of, these laws and replace it with a pragmatic characterization, does not mean that we quit using these laws in practical life. Accepting the pragmatic critique of the standard philosophical characterization of Newtonian mechanics does not mean that we should quit using such physics in engineering applications like bridge building. Yet, when it comes to economics, this seems to be precisely what Dewey is arguing; since the characterization of economic laws in Adam Smith and others should be rejected, the competitive market must necessarily be rejected as an instrumentally efficient means for dealing with practical problems like coordinating economic activity and allocating resources. In the case of natural science, Dewey's rejection of the philosophical characterization of natural laws never leads him to reject those laws as pragmatically useful – the problem lies with philosophy, not with natural science – and yet, when it comes to economic laws, rejecting the philosophical characterization of the economic laws of competitive markets seems to lead automatically to the position that competitive markets can not be pragmatically useful instruments for solving practical economic problems. Why? A much more pragmatic response would seem to say: "Yea, there is no natural tendency to truck, barter, and exchange – competitive markets are as Karl Polanyi (1944) and others have argued, entirely human constructs – but as pragmatists we do not much care what philosophers say about "foundations" or "natural laws"; perhaps competitive markets can be

instrumentally useful for solving various problems in the allocation of economic resources; let's try them out and see how they work." That might be a reasonable pragmatic response, but it doesn't seem to be Dewey's response.

These three tensions are only the tip of the iceberg regarding the complex relationship between Dewey's pragmatic philosophy and his economics. I realize that none of the three criticisms provides anything like a knock-down argument; they are merely suggestions for why it is not necessarily the case that one would need to accept Dewey's attitude about markets just because they find his pragmatism to be a useful framework for helping tread their way through the labyrinth of contemporary science theory and economic methodology. The issue of the relationship between Dewey's philosophy and Dewey's economics clearly remains an open question; the purpose of this section was merely to point out a few issues that might lead one to question whether a tight (or perhaps any) connection exists between the two.

#### 4. Conclusion

I have tried to make the case that pragmatism is consistent with many of the recent developments within the general theory of scientific knowledge; that pragmatism connects up nicely with economic methodology for a number of reasons that go above and beyond the (important) fact that it is consistent with contemporary science theory; and finally that (at the very least) it is an open

question whether approaching economic methodology from a pragmatic perspective necessarily means endorsing Dewey's view of the economy.

It is important to remember that in such discussions, pragmatism (like any other very general philosophical program) is not a view that can be "applied" to questions about economic methodology in the way that positivist or Popperian falsificationist ideas were previously "applied." The changes that have taken place in the general way that questions about scientific knowledge are approached - particularly the emphasis on the social character of such knowledge - has fundamentally changed how both disciplinary philosophy and social science "works" in theorizing about scientific knowledge. It is an environment that is a much more conducive to the emergence, survival, and reproduction of pragmatic ideas than the environment where armchair philosophizing was king and the social sciences were (at best) second class epistemic citizens. This is not to say that pragmatism, Dewey's or any other, is going to provide some nice neat (certain, absolute, universal, ...) answer to all of the questions in general science theory or in economic methodology.

Philosophical positions, after all, are ultimately just tools for coping with the vicissitudes of an uncertain environment; our current intellectual environment just seems to be one that is particularly well-suited for the application of pragmatic tools.

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