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The Separation of Economics from Virtue

A Historical–Conceptual Introduction

Eric Schliesser

The official attitude (of which Robbins is perhaps the best known contemporary exponent) now became more austere: the study of ends was held to be a problem in ethics and the economist *qua* scientist had no special competence in this field, even as applied to economic policy. Quite recently there has been a return to the view that the treatment of welfare problems is an integral part of economic analysis. The new welfare economists claim that many policies can be shown (to other economists?) to be good or bad without entering a dangerous quagmire of value judgments.

George J. Stigler¹

The aim of this chapter is to explain what philosophical commitments drove mainstream professional economists to understand their own discipline as leaving no space for ethics (including virtue) between, say, 1883 and 1977. In particular, I argue that economics embraced a *technocratic conception of politics and science*. An important theme of my chapter is that philosophers, too, embraced and continue to embrace a number of commitments about philosophy and science that entrench a sharp division of labor between philosophers and economics and that keep not just ethics, but virtue, outside of economics. Many of these philosophers' commitments were adopted by economists, such that they could assume, in practice, that there is a self-sufficient apolitical domain of pure economics.² So, in effect, this chapter explores the origin and nature of a conceptual split between economics and ethics.

There are two subsidiary themes in my chapter that are not fully worked out in it, but play a non-trivial role in the development that I sketch. First, I pay some attention to the role of so-called epistemic virtues that good economic

inquirers need to possess by virtue of the split between economics and ethics. By “epistemic virtue” I mean to refer to the moral character or moral properties of the scientific economist. I will not discuss the epistemic virtues commonly associated with scientists, such as patience, objectivity, disinterestedness, and humility, although these do operate in the background, but I will call attention to those epistemic virtues that take on special urgency in light of the larger development. Second, I also consider the ways in which the expert ~~scientist~~ economist can (and cannot) assume to be agreeing with the values of the society she studies and hopes to advise as a policy scientist.

By “technocratic conception of politics and science,” I mean here to capture the following three features of a resilient and influential image within economics.³ First, it is characterized by the ideal that, with social knowledge and its progress, substantial political disagreement can be eliminated. For example, as Milton Friedman claims in his Nobel lecture:

Many countries around the world are today experiencing socially destructive inflation, abnormally high unemployment, misuse of economic resources, and, in some cases, the suppression of human freedom not because evil men deliberately sought to achieve these results, nor because of differences in values among their citizens, but because of erroneous judgments about the consequences of government measures: errors that at least in principle are capable of being corrected by the progress of positive economic science.⁴

Second, and in particular, this ideal of conflict-free politics presupposes (as is clear from the quoted passage above) considerable value-unanimity in society. So, for example, in a famous article, the Chicago-school economists George Stigler and Gary Becker write that “one may usefully treat tastes as stable over time and similar among people,” and that establishing this point “is the central task of this essay.”⁵ When value unanimity is granted, one is allowed to assume representative agents and ordinary welfare economics is possible as a kind of (social) engineering science.⁶

Third, the conception requires an image of science in which one of the central aims of policy scientists is to achieve consensus (or lack of disagreement). In economics this idea goes back, as I show, at least to Henry Sidgwick’s (1883) *Principles of Political Economy*.⁷ In this chapter, I ~~will~~ note that the adoption of certain mathematical tools was, in part, designed to facilitate such consensus generation. It is worth emphasizing, however, that (a) I am not claiming that all consensus generation tools were introduced with a technocratic conception in mind, and (b) that the expectation of consensus was by no means universal even among those firmly committed to a mathematical approach. Friedman’s sometime co-author, L.J. Savage, for example, insists in *The Foundations of Statistics*, that “we must be prepared to find reasoning inadequate to bring about complete agreement.”⁸ But Savage’s view became a minority position.⁹

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Before I turn to my argument, I wish to explain the choice of dates that I have adopted. The concluding date was chosen because several of the most important papers I mention were published in that year. I could have chosen more recent statements to illuminate the claims I make,¹⁰ but, as the chapters in this volume suggest, professional economics may be changing so that the question of virtue's role in economics can be asked anew. In particular, my chapter does not touch on the increasing use of data-mining and so-called natural experiments within economics, and this is why I do not wish to convey completeness.

The starting date is a bit more arbitrary (although not entirely): it is the year in which Sidgwick published the first edition of *The Principles of Political Economy*, a textbook designed for a self-standing discipline of (political) economics, distinct from moral philosophy, at Cambridge University, a department that was eventually (within a decade) co-founded with Alfred Marshall.¹¹ This textbook, and works by Alfred Marshall and J.N. Keynes (a Cambridge logician-methodologist of economics and the father of the more famous Keynes) which I discuss below, also helped facilitate the shift of economics away from the so-called Historical and Moral Sciences Tripos to a self-standing Economics Tripos in 1903.¹² Sidgwick was the leading ethicist of his time (and arguably one of the most enduringly influential philosophers of the English language) and extremely sophisticated philosophically.

For, the character of political economy changed between, say, Adam Smith's "moral science" (his *Wealth of Nations* was published in 1776) and the period in which economics became thought of as a "social science."¹³ To be clear, and to avoid a common confusion, the 18th century term "moral science" (or "moral philosophy"—"philosophy" and "science" are often treated as synonyms at the time) does not quite mean what we might think it means.¹⁴ Condorcet, for example, understood "by this term all those sciences that have as their object either the human mind itself, or the relations of men to another."¹⁵ Moral sciences were opposed to physical sciences and distinguished by the kinds of causes to be discussed. Moral sciences dealt with moral causes, wherein "moral" meant something like "social." For example, institutions, norms, education, language, emotions, and property-relations were all thought of as *moral* causes; by contrast, geography, climate, mechanics, and matter-theory were physical causes.

Therefore, eighteenth century "moral" science and twentieth century "social" science are closer in outlook than is commonly thought. Even so, the two practices have different presuppositions: social science often presupposes a version of the fact–value distinction, whereas in moral science, "the natural course" or "nature" is often itself normative. If acting according to nature, or properly cultivated nature, is a key criterion or means towards the practice of virtue—as it is in many traditions—then moral science might be a guide to the practice of virtue.

Now, Smith has a traditional and demanding understanding of virtue. His most explicit and simultaneously very demanding definition is as follows: “virtue is excellence, something uncommonly great and beautiful, which rises far above what is vulgar and ordinary.”¹⁶ By “vulgar” Smith does not mean somebody rude in our sense, but rather something akin to our “run-of-the-mill” (which can encompass rudeness). Few people writing today would accept such a demanding standard of virtue, which is apt for a classical sage. (Most chapters in this volume work with a less demanding standard.) Smith’s political economy did not presuppose, expect, or describe virtuous people in this demanding sense, although he did hope that by reducing human misery and power differences, commercial society would make it more likely that such virtue, and also less demanding virtues, could be practiced within the rule of law.¹⁷

As many other commentators have noted, Smith did think of prudence as a virtue:

In the steadiness of his industry and frugality, in his steadily sacrificing the ease and enjoyment of the present moment for the probable expectation of the still greater ease and enjoyment of a more distant but more lasting period of time, the prudent man is always both supported and rewarded by the entire approbation of the impartial spectator, and of the representative of the impartial spectator, the man within the breast.¹⁸

So, moral science, as practiced by Smith in his political economy, presupposed and made explicit further, less demanding moral values, such as humanity, equity, flourishing, and prudence, that are often thought extrinsic to the practice of late nineteenth century social science.¹⁹ This is, in part, due to a new conception of “science” in the wake of Whewell coining the term “scientist” (while reviewing a book by Mary Somerville) and Comte’s positivist interpretation of “science.” The normative conception of “nature,” while not wholly eliminated, was not part of the official self-understanding, or image, of science. Sidgwick, whose *Methods of Ethics* and *History of Ethics* still frames philosophy’s self-understanding, was not a passive bystander to this historical transformation, and so we have to understand his recasting of political economy as a principled decision.²⁰

In what follows, I give a historical sketch of the adoption of the technocratic conception of politics and science within mainstream economics. Along the way, I call attention to the key distinctions that left no place within economics for virtue in the demanding sense quoted from Smith, as well as in the less demanding sense, such as equity, humanity, prudence, and so forth, that he wished to promote in his political economy. I proceed roughly chronologically: in the first section I focus primarily on the late nineteenth century, and in the second section I focus on the period after World War II in which economics became the dominant policy science. I will emphasize the links between the two periods by way of the now-forgotten John Neville Keynes.

1. SIDGWICK, KEYNES, AND THE DISTINCTION BETWEEN POSITIVE ECONOMICS AND ETHICS

Utilitarianism was, and still is perhaps, the most influential longest continuing tradition in English speaking moral philosophy. While it perhaps can claim no writer of the stature of Aristotle and Kant (their ethical works being in a class of themselves), taking the tradition as a whole, and viewing its extent and continuity and ever increasing refinement in certain parts of the view, utilitarianism is perhaps unique in its collective brilliance. One must remember that utilitarianism is historically part of a doctrine of society, and is not simply a detached philosophical doctrine. The utilitarians were also political theorists and had a psychological theory. Also, utilitarianism has had considerable influence in certain parts of Economics. Part of the explanation for this is that if we look at the more important economists in the English tradition before 1900 and the well-known utilitarian philosophers, we'll find that they're the same people; only Ricardo is missing. Hume and Smith were both utilitarian philosophers and economists . . . Sidgwick and the great economist Marshall were both in the same department at Cambridge, when they decided to found a separate department of economics around 1896.

Since that time there has been a split, although utilitarianism still influences economics, and welfare economics has a close connection to the utilitarian tradition. Still, since 1900 the tradition has divided into two more or less mutually-ignoring groups, the economists and the philosophers, to the reciprocal disadvantage of both . . . The division is not easy to rectify given the pressures of specialization, and much else. It is also very difficult nowadays to get a sufficient grasp of topics in both subjects for one person to intelligently discuss them.

—John Rawls²¹

In this section I first turn to Sidgwick and explain how he and his successors promoted a conceptual split between economics and ethics. Conceptually and methodologically the split required the embrace of a certain image of science. By an “image of science” I mean to call attention to a list of characteristics that function as a kind of shorthand for representing science; these characteristics are used in polemical or educational contexts often to justify or rely on the epistemic authority of a practice described as “science.” This image is often accompanied by a privileged list of scientific or epistemic virtues. I call it an “image” to highlight that when such an image is deployed, there tends to be lots of tacit commitments about the nature of knowledge, the nature of reality, the nature of society, and also the nature of science.

In the epigraph to this section, John Rawls, himself a great student of the history of economics and philosophy,²² notes that in the wake of Sidgwick there has been a “split” between “philosophers and economists” even *within* the “utilitarian tradition” as well as the two disciplines generally. Here I leave

aside the (opportunistic and somewhat misleading) characterization of Hume and Smith as belonging to the utilitarian tradition.²³ Rawls does not attribute the “split” to Sidgwick, but I follow Rawls in assuming that in the final decade of the nineteenth century, Sidgwick and Marshall were part of an attempt at a decisive change.²⁴ I use “attempt” because part of the point of what follows is that the “attempt” did not, despite disciplinary and educational splits, wholly succeed and I exhibit this by showing ongoing mutual explicit and implicit influence by philosophers and economists.

In the introduction to his *Principles*, Sidgwick is explicit that his aim is to salvage “the really sound and valuable results of previous [economic] thought” from “the waves of disputation”—in other words, to “eliminate unnecessary controversy.” For “[*Principles*] is written in the belief that the reaction above described against the treatment of Political Economy as an established science was inevitable and even salutary; but that it has been carried too far.”²⁵ Sidgwick’s project within economics is to create a technical apparatus that produces consensus among experts; without this, the political economist has no special standing as the expert worth listening to by policy-makers. Beyond the area of agreement, all existing further disagreement has either to be caused by conflicting facts (as Sidgwick acknowledges in context) or by fundamental differences in values (as Sidgwick describes in great detail in his later discussion of the legacy of Adam Smith). Thus, his project is to create a (mathematical) body of doctrine (about economic causes) that economists could rally around, so it could become the most important policy science. As Sidgwick writes:

In those parts of this work in which I have used chiefly deductive reasoning, I have made it my special aim to state explicitly and keep clearly in view the limited and conditional applicability of the conclusions attained by it.

With this view I have been generally careful to avoid any dogmatic statements on practical points. It is very rarely, if ever, that the practical economic questions which are presented to the statesman can be unhesitatingly decided by abstract reasoning from elementary principles. For the right solution of them full and exact knowledge of the fact of the particular case is commonly required; and the difficulty of ascertaining these facts is often such as to prevent the attainment of positive conclusions by any strictly scientific procedure.²⁶

According to Sidgwick, economics is (in part) an abstract policy science whose advice guides the “statesman,” but the mathematical and theoretical framework that is capable of generating consensus has “limited and conditional applicability.” For, economic policy advice does not merely require deduction from foundational economic theory to particular consequences, but also knowledge of (relevant) particular facts. While there is consensus among experts over economic theory, there would be (more) consensus over policy advice if (a) all relevant facts were known and (b) policy experts relied on the

same core principles from which they deduce their (conditional) advice. It is no coincidence that the collection of massive amounts of data and the development of mathematical theory have become an increasing priority.²⁷

In the passage quoted above, Sidgwick relies on a distinction regarding economics between the theoretical consensus it can generate and the univocal policy guidance it could offer if there were better data and consensus over values (which is one reason why the theoretical framework is “conditional”). He develops the idea and makes it more explicit as follows in describing the status of *laissez faire* in scientific economics:

It must be obvious, however, as soon as it is pointed out, that the investigation of the laws that determine actual prices, wages and profits, so far as these depend on the free competition of individuals, is essentially distinct from the inquiry how far it is desirable that the action of free competition should be restrained or modified . . . So far as the purely scientific economist studies primarily the results that tend to be produced by perfectly free competition, it is not because he has any predilection for this order of things—for science knows nothing of such preferences—but merely because its greater simplicity renders it easier to grasp. He holds that a knowledge of these simpler relations precedes, in the order of study, the investigation of more complex economic problems that result from competition modified by disturbing causes. But the adoption of a perfectly free competition as a *scientific* ideal—a means of simplifying the economic facts which actual society presents, for the convenience of general reasoning—does not imply its adoption as a *practical* ideal, which the statesman or philanthropist ought to aim at realising as completely as possible.²⁸

Here Sidgwick articulates a sharp division between the study of a (simplified) model or abstract reality and the articulation or discovery of what is desirable. The former is capable of generating consensus, whereas the latter, the development of a “practical ideal” that is implemented by a “statesman or philanthropist,” is not a matter of *economic* science, but instead belongs properly to ethics. As it happens, Sidgwick also thinks ethics can be made into something like a science: “ethics seeks to attain systematic and precise general knowledge of what ought to be, and in this sense his aims and methods may properly be termed ‘scientific.’”²⁹ But he makes a sharp distinction between the agreement over beliefs with “other members in our society” and the agreement over “new beliefs” that is subsequent ethical argument.³⁰

So, *within* economics it is not permitted to take such ethical science for granted. That is to say, the key epistemic virtue presupposed by a Sidgwickian scientific economist is self-command (or self-limitation); if she wishes to avoid needless conflict, she limits the scope of her claims to a model (or, ~~less anachronistically~~, hypothetical) reality.³¹ In fact, Sidgwick thinks the virtue of “self-control,” which is a “habit of resistance to desires and fears,” *just is* “practical wisdom” (so far as practical wisdom “is a virtue”).³² That is to say, a true Sidgwickian economist would possess practical wisdom.

To be sure, Sidgwick's image of science in which science generates consensus is not the only possible image of science, despite the fact that it would seem quite natural to those of us trained up on Kuhnian notions of "normal" science as consensus. This is not the place to explore alternative images of science more permissive of permanent disagreement; but these were developed by influential contemporaries of Sidgwick.³³

To sum up my treatment of Sidgwick, in effect he proposes a threefold distinction between theoretical political economy, practical political economy, and ethics. The first and third are theoretical enterprises in which consensus is possible; the second guides policy and is implemented by a statesman or philanthropist, and in it there is no consensus because of uncertainty over particular facts.³⁴ Therefore, we have in Sidgwick already the broad outlines of the technocratic conception of science and politics.³⁵

The scheme sketched in Sidgwick is elaborated and made precise in much greater detail by his Cambridge colleague, John Neville Keynes, whose now all-but-forgotten work *The Scope and Method of Political Economy* was probably the first self-standing contribution to what we might call "philosophy of economics" in the English language.³⁶ Keynes, too, makes a distinction between economic science and ethics: "it is not . . . the function of the [economic] science to pass ethical judgments."³⁷ But Keynes is not a slavish follower of his more famous colleague. He writes:

There is a further reason why a positive science of political economy should receive distinct and independent recognition. With the advance of knowledge, it may be possible to come to a general agreement in regard to what is or what may be in the economic world, sooner than any similar agreement is attainable in regard to the rules by which economics of individuals and communities should be guided. The former requires only that there shall be unanimity as to the facts; the latter may be prevented by conflicting ideals, as well as by divergent views as to the actual or the possible.³⁸

Unlike Sidgwick, Keynes does not expect (foreseeable) agreement over social values. The reason for this is not that he expects moral pluralism (along, say, the lines of Max Weber, who thinks that the increased complex division of labor of modern society would generate plurality of values),³⁹ but rather that he thinks that people's (modal) expectations will be non-uniform (or "divergent").

We might say that he expects that, when it comes to what ought to be the case, Keynes thinks that people's sense of reality is going to be different.⁴⁰ In fact, he introduces enduring terminology to describe the practice that relates to social ideals, calling it "normative economics" (or "applied ethics"), which is a "body of systematized knowledge relating to criteria of what ought to be;" furthermore, it's "about the ideal as distinguished from the actual," and normative economics consists of "judgments."⁴¹ Crucially, normative projects,

even the ones that pertain to economic phenomena, should be kept outside economics (which is why “applied ethics” is a better term for the enterprise). Again, we see that one of the key assumed theoretical virtues that a practicing positive economist should have is a kind of self-command in order not to overstep the boundaries of positive science.

Not unlike Sidgwick, Keynes expects economics to generate agreement over the model reality (“economic world”) and its possibilities (“what may be”). The domain that can be subject to consensus he calls “positive economics,” which is just a “body of systematized knowledge of what is.”⁴² These facts, once established, are not supposed to be controversial. Again, similar to Sidgwick, Keynes thinks that there ought to be a bridge between positive economics and actual policy-making. This he called the “art of economics,” which is a “system of rules for the attainment of a given [policy] end.”⁴³ He does not seem to have thought that the art of economics is capable of generating a consensus (again in agreement with Sidgwick); rather, it’s the domain of (defeasible) maxims and practical precepts. As I explain in Section 2, this threefold distinction among the art of economics, positive economics, and normative economics is turned into a cornerstone of Milton Friedman’s methodological writing about economics.

But Keynes is not merely a terminological innovator over Sidgwick. He also adds a temporal dimension to the image of science that was relevant to positive economics. Keynes thinks that sciences can be more or less mature: for example, economics was a less mature (or less “definitive”) science than, say, “physics and astronomy.” For Keynes relies on the idea that a science develops through different stages, including a “descriptive or classificatory” stage before reaching an ultimate (or “definitive”) “deductive” stage.⁴⁴ In fact, sciences, including economics can undergo “revolutions.” One important example of this is the so-called marginal revolution of Walras, Menger, and Jevons (of the 1870s); Keynes singles out Menger, in particular, as one such revolutionary, who is also self-reflective about the method and history of economics.⁴⁵ So, in Keynes’s image of science there is, over time, development from primitive science (without consensus) to mature science (with consensus) as well as the possibility of revolutions between mature theories.⁴⁶

I mention Keynes’ image of science not just because of its intrinsic interest (and the ways in which it prefigures Kuhnian philosophy of science), but also because this image gets deployed in order to keep ethics outside of positive economics. As Keynes writes:

If political economy regarded from the theoretical standpoint is to make good progress, it is essential that all extrinsic or premature sources of controversy should be eliminated; and we may be sure that the more its principles are discussed independently of ethical and practical considerations, the sooner will the science emerge from its controversial stage. The intrusion of ethics into economics cannot but multiply and perpetuate sources of disagreement.⁴⁷

We can see that the independence of positive economics from both applied ethics and the art of economics is, in fact, treated as a (nearly) necessary precondition for progress in positive economics. It follows from this that Keynes thinks of applied ethics as a source of permanent disagreement. Keynes' key move, thus, is not the distinction between (a) a realm of facts and their generalizations that may lead to unanimity and (b) a realm of values that are sources of disagreement. Rather, the key is that he deploys some such distinction in the context of a "theory" of scientific "progress" in which a field develops from the immature, conflict-ridden stages to mature stages characterized by considerable agreement. He sketches a route to progress in knowledge only if economics can be cleansed from ethics.

Sadly, Keynes does not reflect on all the difficulties with the idea of making theoretical or positive economics independent of ethical judgments. But, in disciplinary practices, Keynes' position is attractive to those economists who wish to "get on" with their research and possibly sell its fruits to others (politicians and philanthropists), as well as to those philosophers who are enamored by the idea that they are the experts of pure ethical matters. Keynes's position becomes second nature to those educated or disciplined as *professional* economists or philosophers; it is how they (we) learn to see the world.

A generation later, Lionel Robbins captures the upshot of Sidgwick's and Keynes' position nicely when he writes that "economics deals with ascertainable facts; ethics with valuations and obligations," while recasting the nature of economics subtly:

And, quite apart from all questions of methodology, there is a very practical justification for such a procedure in the rough-and-tumble of political struggle, differences of opinion may arise either as a result of differences about ends or as a result of differences about the means of attaining ends. Now, as regards the first type of difference, neither Economics nor any other science can provide any solvent. If we disagree about ends it is a case of thy blood or mine—or live and let live, according to the importance of the difference, or the relative strength of our opponents. But, if we disagree about means, then scientific analysis can often help us to resolve our differences. If we disagree about the morality of the taking of interest (and we understand what we are talking about), then there is no room for argument. But if we disagree about the objective implications of fluctuations in the rate of interest, then economic analysis should enable us to settle our dispute. . . . Surely, for the sake of securing what agreement we can in a world in which avoidable differences of opinion are all too common, it is worthwhile carefully delimiting those fields of enquiry where this kind of settlement is possible from those where it is not to be hoped for—it is worthwhile delimiting the neutral area of science from the more disputable area of moral and political philosophy.⁴⁸

Here the "neutral area" of positive economics has explicitly become what one might call "instrumental reason." What Robbins describes is, by Sidgwick's

lights, a species of “technical skill” which selects “the best means to given ends in a certain limited and special department of human action,” a form of “worldly-wisdom.”⁴⁹ In limiting economics’ domain as a conditional science, it becomes possible to generate the hoped-for agreement. Economics here has the character of an engineering science that works within given constraints. Robbins himself thought this meant that so-called “welfare economics” was illegitimate (and so he could block social engineering). But in his landmark 1947 work *Foundations of Economic Analysis*, which inaugurated the so-called mathematical revolution in economics, Paul Samuelson (correctly) noted that all this entails is that if there are values, then the economist’s job can be to analyze what follows from them: “it is a legitimate exercise of economic analysis to examine the consequences of various judgments.”⁵⁰

By contrast, according to Robbins there is little hope to generate agreement over ends: recall, from the passage quoted above, that “it is a case of thy blood or mine—or live and let live, according to the importance of the difference, or the relative strength of our opponents.” Moral and political philosophy now have become a field of permanent disunity—no surprise he would have thought so during the 1930s with communism, fascism, and liberalism being deadly rivals—disconnected from economics.⁵¹ While Robbins himself was no friend of technocratic social engineering, it is—with the benefit of hindsight—no surprise too that his understanding of economics carried the day within economics after World War II. It provided the economists (as was his intention) with a way of understanding and selling themselves as neutral experts and inaugurated a great age of a technocratic conception of economics. The aim of Section 2 is to argue that this technocratic conception was shared by post-world-war Keynesians and Chicago-school pro-free-market-types.

This is not to deny that the engineering conception bequeathed by Robbins was not contested. Keynes hated it⁵² and so did his ideological rival, the Chicago economist Frank Knight,⁵³ but while they made many telling and undeniably sound criticisms, ultimately their resistance was swept away by the cold-war growth of mathematical economics (despite opposition from economists like Kenneth Boulding).⁵⁴ From the vantage point of the technocratic conception of politics and science, what was required was (a) a commitment to consensus in society and (b) ways to remove conceptual barriers to embracing consensus in science.

In Section 2 my focus is exclusively on (a), but on (b) let me just note two significant developments during the early period of the formal revolution in economics (from 1945 to 1955). First, in polemical exchanges (known in part as the Koopmans-Vining debate),⁵⁵ Koopmans defended the use of econometric techniques because they could generate policy-relevant predictions.⁵⁶ Second, while leading, ideologically diverse economists of the 1920s and 1930s, such as John Maynard Keynes and Frank Knight, embraced epistemic and metaphysical versions of uncertainty, their views were tacitly rejected and displaced by

commitments to probable risk and uncertainty as randomness, both of which were friendly to mathematical treatment.⁵⁷ For example, the Nobel-winning Chicago economist (and student of Milton Friedman), Gary Becker, argues that agents “will be represented by a probabilistic model in which decisions are determined so to speak, by the throw of a multisided die.”⁵⁸

2. POSITIVE AND NORMATIVE ECONOMICS AND THE TECHNOCRATIC CONCEPTION OF POLITICS

During the 1930 and 1940s, an age of “revolution” in economics, the “new welfare economics” (NWE) became an autonomous, highly technical discipline within mathematical economics.⁵⁹ This revolution is associated with Paul Samuelson’s *Foundations of Economic Analysis*.⁶⁰ While its formulae were developed within a utilitarian, moral philosophical framework, by focusing on so-called “revealed preferences,” NWE dispensed with the psychological commitments of utilitarianism so it could explore the *formal* characteristics of social choice without, as it claimed, highly contested psychological and moral judgments.⁶¹ This development fit well with the technocratic self-conception of a burgeoning field that was about to become the privileged policy science, displacing law, history, and civil engineering, and winning out over sociology and political science.

Samuelson’s vision was contested in a fierce, brief exchange with George Stigler at the height of World War II in the pages of the *American Economic Review*. Their polemic reveals the significance of the issues central to this chapter. Stigler, winner of the 1982 Nobel Prize in economics, argued in 1943 that NWE assumes a question-begging consensus over values in a given society.⁶² Stigler criticizes what soon became the dominant approach within professional economics that combined sophisticated mathematical technique, a focus on revealed preference, and an understanding of economics (inspired by Robbins) as resource maximization under constraint. Near the end of his discussion, Stigler writes:

Talcott Parsons probably had economists in mind when he wrote: “For it is a fact that social existence depends to a large extent on a moral consensus of its members and that the penalty of its too radical breakdown is social extinction. This fact is one which the type of liberal whose theoretical background is essentially utilitarian is all too apt to ignore—with unfortunate practical as well as theoretical consequences.” *At the level of economic policy, then, it is totally misleading to talk of ends as individual and random; they are fundamentally collective and organized. If this conclusion be accepted, and accept it we must, the economist may properly exceed the narrow confines of economic analysis. He may cultivate a second discipline, the determination of the ends of his society*

particularly relevant to economic policy. This discipline might be called, following J.N. Keynes, applied ethics.⁶³

While the *American Economic Review* was already the most important journal within economics, Stigler's article opens with a long epigraph from Aristotle's *Nicomachean Ethics*.⁶⁴ Stigler then targets the formal revolution with an argument that was philosophical, not mathematical. In particular, Stigler argues that economists presuppose a moral and political consensus when they are doing *policy science*. Stigler—who is here echoing his teacher Knight—takes for granted that the economic sphere is framed or constrained by political or social ends.⁶⁵ (It is on this point that Stigler cites Parsons approvingly.⁶⁶) Thus, Stigler's argument distinguishes between pure economic analysis, in which ends are thought of as individual and random, and policy science (or applied ethics), where ends are unified; and it is this distinction that drives him to accept Keynes' own distinction between positive economics and applied ethics.

Stigler's point is not that economists should avoid policy science. Echoing Sidgwick and Keynes, he thinks that economists ought to cultivate such applied ethics, and that this can be pursued scientifically:

It is quite another thing to conclude that therefore ends of good policy are beyond the realm of scientific discussion.

For surely the primary requisite of a working social system is a consensus on ends. The individual members of society must agree upon the major ends which that society is to seek. If any large share of the population actively disagrees with the society's ends, and in particular if it believes that the system is unfair by the group's criteria, the social system will surely disintegrate, probably with violence. This is almost axiomatic in modern social theory.⁶⁷

It might seem that, for Stigler, economists should try to discover empirically *what* the "consensus" over society's "major ends" involves. But this is not what happened. Rather, economists ran with the other implication: *that* there is such a consensus can be discerned by the lack of civil strife (or even war).⁶⁸

So, Stigler's criticism of the main thrust of the formal revolution (as characterized by the NWE), while perhaps motivated by displeasure with the political direction that welfare economics might take, is not ultimately political but philosophical; he insists that the normative presuppositions of NWE ought to be different than the assumptions in pure (positive) economics. Stigler argues for greater self-understanding on the part of economists about the *essentially* political nature of welfare economics when applied to societies. In context, Stigler's point is meant to warn against two tendencies: first, the tendency to import the representative agent into the pure part of economic analysis, and second, the tendency to forget the contentious nature of assuming that that society's ends are unified.⁶⁹ Stigler's argument presupposes, of course, that there is a self-sufficient apolitical domain of pure economics.

In response, Samuelson never denies this; instead, he focuses on some technical mistakes in Stigler's examples, ridicules Stigler's tacit elitism ("frankness necessitates the regrettable admission that neither the old nor new welfare economics qualifies as sprightly conversation in the Dale Carnegie, the Oscar Wilde, or even the Oxford Movement sense") and insists that NWE applies only to "a *limited* set of pairs of situations, [between which] it does tell us which *would* be better *if* we had the choice between them" (emphases in original).⁷⁰ Samuelson insists that NWE rests on "the relatively mild assumptions that (1) 'more' goods are 'better' than 'less' goods; (2) individual tastes are to 'count' in the sense that it is 'better' if all individuals are 'better' off."⁷¹ While there are serious metaphysical and axiological issues that haunt these two assumptions, this seems to have ended debate over NWE within economics for several decades.⁷²

Officially, the stance of the profession echoed Samuelson's deflationary position about the aspirations of NWE,⁷³ but in practice it provided a "professional consensus" for so-called "applied" welfare economics, "to increase, to society's general benefit, the influence on public policy of good economic analysis." I am quoting from a piece by Arnold Harberger, the intellectual mentor of the so-called Chicago-Boys and a colleague of Stigler and Friedman at Chicago in the 1960s and 1970s.⁷⁴

A few years later, in reviewing Samuelson's *Foundations*, Stigler alludes to his exchange with Samuelson:

I persist in my belief that this [NWE] is one of the less fertile areas that modern economists till; it is symptomatic that we have elaborate instructions on how to form welfare judgments that do not depend on value judgments, but we have no illustration of the application of this technique to a real problem of contemporary policy. Samuelson indeed offers much support for this skeptical view, by this enumeration of the assumptions of the new welfare economics . . . most of which are held to be partly invalid. But he fails to examine other facets of the problem, one of which, I think, is especially significant. When economists are writing freely on desirable policy, that is, when they are not writing on methodology, the disputes are almost always over how the economic system works, and not over the goals that should be sought.⁷⁵

Despite criticizing Samuelson, Stigler here anticipates the central commitment of the technocratic conception—consensus over fundamental values—made by Friedman in his 1953 methodology essay: "I venture the judgment, however, that currently in the Western world, and especially in the United States, differences about economic policy among disinterested citizens derive predominant from different predictions about the economic consequences of taking action—differences that in principle can be eliminated by the progress of positive economics."⁷⁶ So, given the embrace of the technocratic conception of economics and science, political conflict can be eliminated once economics has become mature.

Note, however, that in his review of Samuelson, Stigler assumes consensus over values among the experts (“economists . . . writing freely on desirable policy”), *not* necessarily the public.⁷⁷ In fact, in the concluding paragraph of the review, Stigler advocates that Samuelson make his work intelligible to fellow experts, other economists, not the public at large. This is a matter of “responsibility” to “scholarly canons,” not society. By Stigler’s lights, then, economists have *duties* to the guild of experts or, perhaps, he thinks there is an ethics of inquiry; but these duties are not necessarily to society. (If economists are also treated as ordinary agents, then one can say about them what Stigler notes about “particular entrepreneurs,” that they are “in the industry because it is the most profitable place to be.”) Of course, once economists are trained in or recruited from the ranks that understand “advanced calculus, higher algebra, and differential equations,” and it is assumed that they agree on fundamental values (which they are taught is not part of their subject matter), then the door is opened to economists-as-social-engineers who, once the technocratic conception of politics and ethics is accepted, neither question given ends *qua* scientists and may overlook tacit normative commitments of their theories and concepts. (Stigler does not offer an analysis of the distinction between fundamental and lesser values.)

Thus, in the context of criticizing the main theoretical workhorse of economics as a technocratic policy science, Stigler explicitly accepts J.N. Keynes’ contrast between positive economics and normative economics. But rather than rooting normative economics in a distinct science of ethics, Stigler, after reflecting on his exchange with Samuelson, claims (with a nod to Talcott Parsons) that its normative principles are either major ends that must be presupposed by any existing political community or, at least, are presupposed by the community of experts. So, Stigler does not deny that a community of experts requires shared values or even an ethics. (He had, in fact, an enduring interest in the sociology of knowledge.⁷⁸) But he insists that it is not a *proper* part of economics to reflect on values.

When Stigler’s life-long friend, Milton Friedman, articulated his methodological commitments in 1953—after intensive correspondence and discussion with Stigler⁷⁹—he begins by explicitly embracing Keynes’s distinctions:

In his admirable book on *The Scope and Method of Political Economy* John Neville Keynes distinguishes among “a positive science . . . a body of systematized knowledge concerning what is; a normative or regulative science . . . a body of systematized knowledge discussing criteria of what ought to be . . . an art . . . a system of rules for the attainment of a given end”; he comments that “confusion between them is common and has been the source of many mischievous errors”; and urges the importance of “recognizing a distinct positive science of political economy.”⁸⁰

As we have seen, in 1953, Friedman is not entirely assured that economics is fully mature.⁸¹ But on the whole, during subsequent decades, the discipline

embraces the idea and Kuhnian tropes and rhetoric became ubiquitous in economics.⁸²

One further reason to highlight Friedman's 1953 essay is that it also articulates a conception of scientific objectivity in terms of rule-following and a publicity requirement.

In seeking to make a science as "objective" as possible, our aim should be to formulate rules explicitly in so far as possible and continually to widen the range of phenomena for which it is possible to do so. But, no matter how successful we may be in this attempt, there inevitably will remain room for judgment in applying the rules.⁸³

In relying on a public ("explicitly") rule-following conception of objectivity, Friedman thereby minimizes the requirement of theoretical virtue(s) among scientific practitioners. As he recognizes, of course, he cannot eliminate the requirement of good judgment among scientific practitioners entirely.

To forestall twofold misunderstanding, I am not claiming that the technocratic conception of politics is an autonomous invention by economists or only adopted by them. In particular, the technocratic conception of politics is also fully embraced in the seminal text of twentieth century political philosophy, John Rawls' *A Theory of Justice*. Rawls' approach can be understood as offering a decision procedure that generates unanimity.⁸⁴ In fact, in doing so, Rawls appeals to Knight's claim that "legislative discussion" is an expert "objective inquiry" and not a contest between interests!⁸⁵ So, Rawls accepts the third condition of the technocratic conception of economics even outside science, for "moral philosophy."⁸⁶

Moreover, Rawls writes:

By way of summing up, the essential point is that despite the individualistic features of justice as fairness, the two principles of justice are not contingent upon existing desires or present social conditions... By assuming certain general desires, such as the desire for primary social goods, and by taking as a basis the agreements that would be made in a suitably defined initial situation, we can achieve requisite independence from existing circumstances. The original position is so characterized that unanimity is possible; the deliberations of any one person are typical of all. Moreover, the same will hold for the considered judgments of the citizens of a well-ordered society effectively regulated by the principles of justice. Everyone has a similar sense of justice and in this respect a well-ordered society is homogeneous. Political argument appeals to this moral consensus.⁸⁷

Here Rawls clearly subscribes to the first two features of the technocratic conception. Even so, we should be alerted at once that Rawls' position is idiosyncratic because he resists securing liberties by "uncertain and speculative actuarial calculations."⁸⁸ But I leave this non-trivial complication (and the role of uncertainty more generally in Rawls) aside.

3. CONCLUSION

Thus, within the technocratic conception of politics and science there is little room for theorizing about the exercise of virtue of economic agents and, more reflexively, by economic theoreticians. The theorized agents (and markets) are increasingly thought of as responding to incentives⁸⁹ and constraints as well as to be otherwise random in their behavior. Even the intellectual virtues of the theoreticians tend to be assumed or they get displaced by conceptions of objectivity as primarily, disinterested rule-following. In this latter way, the economist qua scientist gets conceived of as a kind of Weberian bureaucrat.

However, this (often tacit) conception of the scientist as rule-follower is now being displaced by a conception of science promoted by grant agencies that seeks to make the scientist respond to scientometrically-informed incentives. For, in this chapter I have not discussed the “demand” side: that governments, foundations, grant agencies, and university administrators have also shaped disciplinary discussions.⁹⁰

In this chapter, I have focused on how philosophical ideas, developed within economics and philosophy, shaped the way economists conceived of their expertise and how they conceive of the nature of science. I have also argued that these ideas also created an intellectual division of labor among experts who deal with economic facts and experts who deal with moral facts. While that division may have originated, in part, in an embrace of the fact–value distinction, once the divided expertise becomes associated with different professional disciplines it does not require the acceptance of that distinction to sustain itself.⁹¹

NOTES

1. George J. Stigler, “The New Welfare Economics,” *American Economic Review* 33(1943): 355–9, at 355.
2. In what follows, I ignore the role of governments, foundations, and others that created incentives in facilitating the rise of this conception.
3. Obviously, the term and the topic are the territory of critical theory (Horkheimer, Adorno, Marcuse, and Arendt) and sociology of knowledge (Mannheim). My focus is narrower than theirs.
4. Milton Friedman, “Nobel Lecture: Inflation and Unemployment,” *Journal of Political Economy* 85(1977): 451–72. Friedman’s Nobel lecture was given in a highly charged, political context resulting from his visit to General Pinochet in Chile a few years before, and shortly after Friedman’s most important critic—the Chilean economist Orlando Letelier—had been assassinated by the Chilean secret police. Even so, it is notable that in the sentence quoted above, Friedman entirely denies the significance of value disagreement in explaining political conflict. See Eric

- Schliesser, “Friedman, Positive Economics, and the Chicago Boys,” in Ross Emmett (ed.), *The Elgar Companion to the Chicago School of Economics* (Cheltenham, UK: Edward Elgar, 2010), 175–95.
5. George J. Stigler and Gary S. Becker, “De Gustibus Non Est Disputandum,” *American Economic Review* 67(1977): 76–90, at 77.
 6. See, for example, the arc that runs from Paul A. Samuelson, “Further Commentary on Welfare Economics,” *American Economic Review* 33(1943): 604–7, to Arnold C. Harberger, “Three Basic Postulates for Applied Welfare Economics: An Interpretive Essay,” *Journal of Economic Literature* 9(3): 785–97. For incisive criticism, see M. Ali Khan, “On Measuring the Social Opportunity Cost of Labour in the Presence of Tariffs and an Informal Sector,” *Pakistan Development Review* 31(1992): 535–64.
 7. In what follows I quote from Henry Sidgwick, *The Principles of Political Economy*, 2nd ed. (London: Macmillan, 1887).
 8. Leonard J. Savage, *The Foundations of Statistics*, 2nd rev. ed. (New York: Dover, 1972), 7; see also 3, 67ff.
 9. The locus classicus is Robert J. Aumann, “Agreeing to Disagree,” *Annals of Statistics* 4(1976): 1236–9. For a critique of Aumann, see Merel Lefevere and Eric Schliesser, “Private Epistemic Virtue, Public Vices: Moral Responsibility in the Policy Sciences,” in Carlo Martini and Marcel Bouman (eds.), *Experts and Consensus in Social Science* (Dordrecht: Springer, 2015), 275–95.
 10. So, for example, I would not have to change much about my argument to accommodate a recent, influential methodological statement (Faruk Gul and Wolfgang Pesendorfer, “The Case for Mindless Economics,” in Andrew Caplin and Andrew Schotter (eds.), *The Foundations of Positive and Normative Economics*, Oxford: Oxford University Press, 2010, 3–42).
 11. I used “arbitrary” because undoubtedly there are earlier anticipations of Sidgwick’s position throughout the nineteenth century. The views I am about to describe can be traced back to Mill: “Mill’s methodological views dominated the mainstream of economic theory for well over a century . . . Mill’s vision survived the so-called neoclassical revolution in economics beginning in the 1870s and is clearly discernible in the most important methodological treatises concerning neoclassical economics, such as John Neville Keynes’ *The Scope and Method of Political Economy* (1891) or Lionel Robbins’ *An Essay on the Nature and Significance of Economic Science* (1932)” (Daniel M. Hausman, “Philosophy of Economics,” *Stanford Encyclopedia of Philosophy*, 2012, <<http://plato.stanford.edu/entries/economics/>>). I focus on Sidgwick because of his importance in (both) the institutionalization of economics and his significance in Rawls’ analysis.
 12. John Maloney, *The Professionalization of Economics: Alfred Marshall and the Dominance of Orthodoxy* (New Brunswick, NJ: Transaction Publishers, 1985/1991).
 13. The two classic, big picture works are Joseph A. Schumpeter, *History of Economic Analysis* (London: Routledge, 1954) and Mark Blaug, *Economic Theory in Retrospect* (Cambridge: Cambridge University Press, 1997). For recent work, inspired by Foucault, see Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press,

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- 1998); Margaret Schabas, *The Natural Origins of Economics* (Chicago: University Of Chicago Press, 2007); and Germano Maifreda, *From Oikonomia to Political Economy: Constructing Economic Knowledge from the Renaissance to the Scientific Revolution* (Surrey: Ashgate, 2012).
14. The following few paragraphs were first published with some variations as <<http://digressionsnimpresions.typepad.com/digressionsimpresions/2015/05/on-the-moral-sciences.html>>.
 15. Quoted from Ian Hacking's translation in *The Taming of Change* (Cambridge: Cambridge University Press, 1990), 38; as his source, Hacking (ibid., 220n3) gives "Eloge de M. Burquet," in A Condorcet-O'Connor and F. Arago (eds.), *Oeuvres de Condorcet* (Paris: Firmin Didot Frères, 1847), 2: 410. Condorcet is also among the first thinkers to use "social science" in something like the modern sense. See K.M. Baker, "The Early History of the Term 'Social Science,'" *Annals of Science* 20 (1964): 211–26; and Robert Wokler, "Saint-Simon and the Passage from Political to Social Science," in Anthony Pagden (ed.), *The Languages of Political Theory in Early-Modern Europe* (Cambridge: Cambridge University Press, 1987), 325–38. (I thank Michael Kremer and Jeroen Van Bouwel for help on this note.)
 16. Adam Smith, *The Theory of Moral Sentiments* (1759), D.D. Raphael and A.L. Mackie (eds.) (Indianapolis: Liberty Fund, 1759/1982), I.1.5.6. For an excellent treatment see Ryan Patrick Hanley, *Adam Smith and the Character of Virtue* (Cambridge: Cambridge University Press, 2009).
 17. Lisa Herzog, "Higher and lower virtues in commercial society: Adam Smith and motivation crowding out," *Politics, Philosophy & Economics* 10(2011): 370–95.
 18. Smith, *Theory of Moral Sentiments*, 6.1.11.
 19. Eric Schliesser, "The Measure of Real Price: Adam Smith's Science of Equity," in Sandra J. Peart and David M. Levy (eds.), *The Street Porter and the Philosopher: Conversations on Analytical Egalitarianism* (Ann Arbor: University of Michigan Press, 2008), 228–38.
 20. Henry Sidgwick, *The Methods of Ethics*, 7th ed. (Indianapolis: Hackett Publishing, 1907/1981) and *Outlines of the History of Ethics for English Readers* (London: Macmillan, 1892).
 21. John Rawls, *Lectures on History of Political Philosophy* (Cambridge, MA: Belknap, 2008), 162–3.
 22. David M. Levy and Sandra J. Peart, "Efficiency or a 'Fair' Game: John Rawls Contra Lionel Robbins," working paper, 2007, available at: <https://researchgate.net/publication/237278013_Efficiency_or_a_Fair_Game_John_Rawls_Contra_Lionel_Robbins>. See also, Daniel Little, "Rawls and Economics," in Jon Mandle and David A. Reidy (eds.), *A Companion to Rawls* (Hoboken, NJ: Wiley, 2013), 504–25; David Coker "Rawls and Knight: Connections and Influence in A Theory of Justice" <<http://jepson.richmond.edu/conferences/adam-smith/papers2015/DCokerSIPaper.pdf>>. In what follows I sometimes use passages from Rawls as signposts in my argument.
 23. Sidgwick and Rawls agree on the characterization, and they can propose good reasons for it, especially in treating Hume this way. (For an alternative, see David Gauthier, "David Hume, Contractarian," *Philosophical Review* 88(1979): 3–38; I thank Donald Ainslie for calling my attention to this.) But Smith is only a

- genuine consequentialist when it comes to evaluating social institutions not when it comes to evaluating individual character or the propriety of behavior. For some discussion see David M. Levy, “The Partial Spectator in the *Wealth of Nations*: A Robust Utilitarianism,” *European Journal of the History of Economic Thought* 2 (1995), 299–326, and D.D. Raphael, *The Impartial Spectator: Adam Smith’s Moral Philosophy* (Oxford: Oxford University Press, 2009), 43–8. (I thank Sam Fleischacker referring me to this reference.)
24. It suits Rawls’ purposes to accept Sidgwick’s invention of a continuous tradition, so that Rawls has a stable (and worthy, “long line of brilliant writers who learned from each other”) target for criticism; Rawls, in turn, invents retrospectively and simultaneously extended an opposing, alternative (social contract) tradition. (I thank Chris Brooke for discussion.)
 25. Sidgwick, *Principles of Political Economy*, 7; see 5–6 for Sidgwick’s analysis of the varied sources of polemics.
 26. *Ibid.*, 7–8.
 27. The Statistical Society of London was founded earlier in the nineteenth century (1834) and among its founding members were important political economists. The founding of mathematical statistics is commonly associated with names like Edgeworth, Galton, and Pearson. Of the three, Edgeworth was also a major economist at Oxford. All three were also major eugenicists; the concern over population was shared by eugenics and political economy in this period (although some economists were anti-eugenics). Darwin-inspired proponents of eugenics rejected any role for sympathy in political economy. See David M. Levy and Sandra J. Peart, “Sympathy Caught Between Darwin and Eugenics,” in Eric Schliesser (ed.), *Sympathy: A History* (Oxford: Oxford University Press, 2015).
 28. Sidgwick, *Principles of Political Economy*, 23–4 (emphasis in original).
 29. Sidgwick, *Methods of Ethics*, 1 (although, in context he explains why he does not refer to ethics as a “science” in order to avoid terminological confusion with some of the human sciences).
 30. *Ibid.*, 16. I ignore here the further question if Sidgwick thought such consensus, even among ethical experts, would be enduring or even possible given what he calls “dualism of the practical reason” in the preface to *Methods of Ethics*.
 31. I ignore here to what degree Sidgwick thought the actual economy approximated the model.
 32. *Ibid.*, 234–5. I thank David Gordon for directing me to the proper section in Sidgwick.
 33. For historical (and polemical) details, see Joseph Agassi, *Science and Its History: A Reassessment of the Historiography of Science* (Dordrecht: Springer, 2008).
 34. I leave it ambiguous to what degree Sidgwick advocated taking the conclusions of ethics as some of the axioms in economics.
 35. I am ignoring complex issues pertaining to the question to what degree Sidgwick was a “Government House” utilitarian that also embraced esotericism (and, thus, would not expect the second criterion of the technocratic conception to be really true).
 36. John Neville Keynes, *The Scope and Method of Political Economy*, 3rd ed. (London: Macmillan, 1904). Obviously, serious reflection on the philosophy of economics

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- precedes Keynes. It is probable, as Jens van 't Klooster suggested to me, that he was inspired by Carl Menger, *Untersuchungen über die methode der socialwissenschaften: und der politischen oekonomie insbesondere* (Berlin: Duncker & Humblot, 1883).
37. Keynes, *Scope and Method*, 60.
 38. *Ibid.*, 52.
 39. See Fred Beiser, *The German Historicist Tradition* (Oxford: Oxford University Press, 2011), chapter 13.
 40. I am indebted to Anna de Bruyckere for this terminology. See also Matthew Ratcliffe, *Feelings of Being: Phenomenology, Psychiatry and the Sense of Reality* (Oxford: Oxford University Press, 2008).
 41. Keynes, *Scope and Method*, 34. (A Google search reveals that Keynes did not invent the phrase “normative economics,” but it was a term that had only recently become more widely used.)
 42. *Ibid.* Keynes tends to slide between treating positive economics as a simplified abstraction and a purely factual science.
 43. *Ibid.*, 34–5.
 44. *Ibid.*, 5.
 45. *Ibid.* Adam Smith’s “History of Astronomy” (published posthumously in 1795 and included in *Essays on Philosophical Subjects*, W.P.D. Wightman, J. C. Bryce, and I.S. Ross (eds.), Indianapolis: Liberty Fund, 1982), offers a historical narrative about successive revolutions among (psychologically) incommensurable systems of thought in the sciences, which have regular patterns of development between each revolution. Carl Menger knew about this work; see his *Untersuchungen über die Methode der Socialwissenschaften und der Politischen Oekonomie insbesondere* (Leipzig: Duncker & Humblot, 1883), 24. (I am unsure if Keynes was aware of Smith’s “Astronomy” or that Menger knew of it.)
 46. This image of science does not generate relativistic concerns in Keynes.
 47. Keynes, *Scope and Method*, 51.
 48. Lionel Robbins, *An Essay on the Nature and Significance of Economic Science*, 2nd ed. (London: Macmillan, 1935), 132, 150–1.
 49. Sidgwick, *Methods of Ethics*, 231–2.
 50. Paul A. Samuelson, *Foundations of Economic Analysis* (Cambridge, MA: Harvard University Press, 1947), 220.
 51. For critical discussion of Robbins’ separation, see Amos Witztum, “Ethics and the Science of Economics: Robbins’s Enduring Fallacy,” *Journal of the History of Economic Thought* 33(2011): 467–86. See also A.B. Atkinson, “Economics as a Moral Science,” *Economica* 76(2009): 791–804, who calls useful attention to the ways in which value judgments inform tacit principles of application even in purportedly neutral areas.
 52. As Lord Keynes wrote to Sir Roy Harrod on July 4, 1938, “As against Robbins, Economics is essentially a moral science. That is to say, it employs introspection and judgement of value” <<http://economia.unipv.it/harrod/edition/editionstuff/rfh.346.htm>>. For discussion, see John D. Davis, “Keynes’s View of Economics as a Moral Science,” in Bradley W. Bateman and John B. Davis (eds.), *Keynes and Philosophy: Essays on the Origins of Keynes’s Thought* (Aldershot, UK: Edward Elgar, 1991), 89–103.

53. For Knight's main statements on the relationship between ethics and economics, see Frank H. Knight, "Ethics and the Economic Interpretation," *Quarterly Journal of Economics* 36(1922): 454–81, and "The Ethics of Competition," *Quarterly Journal of Economics* 37(1923): 579–624. For excellent discussion, see Ross Emmett, "Frank H. Knight on the Conflict of Values in Economic Life," *Research in the History of Economic Thought and Methodology* 9(1992): 87–103.
54. Kenneth E. Boulding, "Economics as a Moral Science," *American Economic Review* 59(1969): 1–12. For good discussion, see M. Ali Khan, "On the Irony in/of Economic theory," *Modern Language Notes* 108(1993): 759–803.
55. For the full exchange, see the May 1949 issue of *Review of Economics and Statistics*, 31(2), available here <<http://cowles.econ.yale.edu/P/cp/p00a/p0029.pdf>>. For discussion see, especially, Edmond Malinvaud, "The Scientific Papers of Tjallinging C. Koopmans: A Review Article," *Journal of Economic Literature* 10(1972): 798–802; see also the commentary in David F. Hendry and Mary S. Morgan (eds.), *The Foundations of Econometric Analysis* (Cambridge: Cambridge University Press, 1995).
56. Tjallinging C. Koopmans, "Measurement without Theory," *Review of Economics and Statistics* 29(1947): 161–72, at 167.
57. For useful accounts see, J. Barkley Rosser, Jr., "Alternative Keynesian and Post Keynesian Perspectives on Uncertainty and Expectations" *Journal of Post Keynesian Economics* 23(2001): 545–66; Charles R. McCann, Jr., *Probability Foundations of Economic Theory* (London: Routledge, 1994); and Geoffrey M. Hodgson, "The Eclipse of the Uncertainty Concept in Mainstream Economics," *Journal of Economic Issues* 45(2011): 159–76. On the significance of randomness, see the concluding page of the important review article by Kenneth J. Arrow, "Alternative Approaches to the Theory of Choice in Risk-Taking Situations," *Econometrica* 19(1951): 401–37, and the reference to the final paragraph of Armen A. Alchian, "Uncertainty, Evolution, and Economic Theory," *Journal of Political Economy* 58(1950): 211–21.
58. Gary S. Becker, "Irrational Behavior and Economic Theory," *Journal of Political Economy* 70(1962): 1–13, at 5 (the entire page is relevant, and Becker cites Alchian's "Uncertainty, Evolution, and Economic Theory"). For an interesting, alternative discussion, see Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France, 1978–1979* (New York: Palgrave MacMillan, 2008), 269.
59. Roger E. Backhouse, "The Transformation of US Economics, 1920–1960, Viewed Through a Survey of Journal Articles," *History of Political Economy*, Number Supplement 30(1998): 85–107. Some of the material in this section draws from Eric Schliesser, "On Joseph Cropsey's 'What is Welfare Economics?'," *Ethics* 125(2015): 847–50.
60. In 1970 Samuelson won the second Nobel Prize in economics for "raising the level of analysis in economic science" ("The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1970," <http://nobelprize.org/nobel_prize-s/economic-sciences/laureates/1970/>). Joseph Cropsey puts it thus: "Professor Samuelson's position among mathematical economists is such that one who seeks an example is not unjustified in turning to his works. I therefore recur to his *Foundations of Economic Analysis*" ("What Is Welfare Economics?" *Ethics* 65(1955): 116–25, at 122).

61. An early survey is E. J. Mishan, “A Survey of Welfare Economics, 1939–59,” *Economic Journal* 70(1960): 197–265.
62. Stigler, “New Welfare Economics.”
63. *Ibid.*, 358 (emphasis added); he quotes from Talcott Parsons, *The Structure of Social Action* (New York: McGraw-Hill, 1937), 395.
64. *Nicomachean Ethics*, 6.7. The sub-text of Stigler’s positions seems to be that Samuelson (like Thales and Anaxagoras) trades in highly technical, esoteric, and useless knowledge, not knowledge of human affairs; he lacks knowledge about the nature of expertise in political society.
65. David M. Levy and Sandra J. Peart, “Stigler, George Joseph (1911–1991),” in Steven N. Durlauf and Lawrence E. Blume (eds.), *The New Palgrave Dictionary of Economics Online*, 2nd ed., 2008, <http://dictionaryofeconomics.com/article?id=pde2008_S000262>.
66. Stephen Stigler informs me that his father owned a copy of the first 1937 edition of Parsons’ *The Structure of Social Action*: “He read it but with few notes. Inside the back cover he marked 3 page numbers: 392, 395, 248 (in that order). In addition there are marginal dashes on pages 232, 256, and 566” (personal communication, March 31, 2010). All six pages concern the common moral values and ends of a political community; they provide the background to the claim with which Stigler ends “New Welfare Economics.” For more on the connection between Stigler and Parsons, see [Schliesser, E. \(2011\)](#), “The Surprising Weberian Roots to Milton Friedman’s Methodology” in *Explanation, Prediction, and Confirmation* (Netherlands: Springer), 533–43.
67. Stigler, “New Welfare Economics,” 357.
68. It does not follow, of course, that all civil strife is over major ends.
69. In 1953 Friedman assumes that in advanced societies values have converged. For the significant afterlife of the issue, see Schliesser, “Friedman, Positive Economics, and the Chicago Boys,” and Ross Emmett, “Realism and Relevance in the Economics of a Free Society,” *Journal of Economic Methodology* 16(2009): 341–50.
70. Samuelson, “Further Commentary on Welfare Economics,” 606.
71. *Ibid.*, 605. Cropsey quotes a version of this argument from Samuelson’s *Foundations of Economic Analysis* (223), at the start of “What Is Welfare Economics?” (116).
72. Cropsey, who was still an economist, published a metaphysical critique (“What Is Welfare Economics?”) in *Ethics*, but this was largely ignored; John Rawls’ *The Theory of Justice* (Cambridge, MA: Harvard University Press, 1971) was a more successful response.
73. The official, limited interpretation was reinforced by Arrow’s famous impossibility results. See S.M. Amadae, *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Liberalism* (Chicago: The University of Chicago Press, 2003).
74. Harberger, “Three Basic Postulates for Applied Welfare Economics,” 786; for criticism, see again Khan, “On Measuring the Social Opportunity Cost of Labour.”
75. George J. Stigler, “Review of *Foundations of Economic Analysis* by Paul Anthony Samuelson,” *Journal of the American Statistical Association* 43(1948): 603–5.
76. Milton Friedman, “The Methodology of Positive Economics,” in *Essays in Positive Economics* (Chicago: University of Chicago Press, 1953), 3–43, at 5.

77. This is a bit of a shift from the 1943 essay, where Stigler allows that some economists can be social reformers that deviate from the socially shared consensus, but that in doing so they stop being “scientists” (see “New Welfare Economics,” 359, especially note 9).
78. Stigler was much impressed by his Columbia colleague Merton; see also his G.J. Stigler, “Does Economics Have a Useful Past?” *History of Political Economy* 1(1969): 217–30.
79. See Daniel J. Hammond and Claire H. Hammond (eds.), *Making Chicago Price Theory: Friedman-Stigler Correspondence 1945–1957* (London: Routledge, 2006). See also Eric Schliesser, “The Surprising Weberian Roots to Milton Friedman’s Methodology” in Dennis Dieks et al. (eds.), *Explanation, Prediction, and Confirmation* (Dordrecht: Springer, 2011), 533–43.
80. Friedman, “Methodology of Positive Economics,” 3.
81. For more details on the history of the idea of immaturity of economics in the period, see Eric Schliesser, “Inventing Paradigms, Monopoly, Methodology, and Mythology at ‘Chicago’: Nutter, Stigler, and Milton Friedman,” *Studies in History and Philosophy of Science Part A* 43(2012): 160–71.
82. For evidence see *ibid.* and Michel de Vroey, “The Transition from Classical to Neoclassical Economics: A Scientific Revolution,” *Journal of Economic Issues* 9(1975): 415–39.
83. Friedman, “Methodology of Positive Economics,” 25.
84. Rawls, *Theory of Justice*, 106, 232–3; Rawls directly confronts Arrow’s charge that this demand is peculiar to “the political philosophy of idealism” on 232–3.
85. *Ibid.*, 314n16. In the note Rawls cites both Arrow and Knight, focusing on their (limited) agreement and ignoring the deeper disagreement. As Rawls adds (in his own footnote): “in both cases see the footnotes!”
86. *Ibid.*, 233.
87. *Ibid.*, 232.
88. *Ibid.*, 139. In “Some Reasons for the Maximin Criterion” (*American Economic Review* 64(1974): 141–6), Rawls sharply distinguishes his use of maximin (as an “equity criterion”) and the then standard use of it in conditions of (probabilistically interpreted) uncertainty in economics.
89. Gordon Tullock, *The Organization of Inquiry* (Durham, NC: Duke University Press, 1966).
90. This also changes how we should think about the moral character of scientific communities, see Lefevere and Schliesser, “Private Epistemic Virtue, Public Vices.”
91. This chapter has benefited from careful and generous comments by Jennifer Baker, Marieke de Goede, Lisa Herzog, Jens van ’t Klooster, Anna de Bruyckere, and the editors of this volume. I would also like to thank audiences in Athens, Ghent, and Johns Hopkins University.