Every other year, a distinguished philosopher is invited to deliver a series of three lectures, the René Descartes Lectures, at the Tilburg Center for Logic, Ethics, and Philosophy of Science (TiLPS) of the University of Tilburg in The Netherlands.

In keeping with the mission of TiLPS, which is to advance understanding of the foundations of knowledge, reasoning and value in all their forms, the aim of the Descartes Lectures is to provide a forum for philosophers of science, logicians, ethicists, and scientists to engage with fundamental philosophical questions about contemporary scientific and societal challenges.

So far, the philosophers invited to deliver the René Descartes Lectures at Tilburg include: Linda Radzik on social punishment (2018), Heather Douglas on values in science (2016), Hannes Leitgeb on belief and credence (2014), Cristina Bicchieri on social norms (2012), Ian Hacking on objectivity and the practice of science (2010) and Huw Price on pragmatism and naturalism (2008).

In 2020, Professor Philip Kitcher (Columbia University, USA) will provide a detailed account of his views on progress in science, mathematics and value theory. Kitcher will deliver one lecture per day. Each lecture will be followed by an invited commentary, and a workshop related to the questions raised by the lectures. Professors Cheryl Misak (University of Toronto, Canada), Michela Massimi (University of Edinburgh, UK) and James Conant (Chicago University, USA; and Leipzig University, Germany) will comment on Kitcher’s lectures, and more researchers will present during the corresponding workshop.

* * *

**Pragmatic Naturalism: Progress in Science, Mathematics, and Values**

Philip Kitcher

**General Overview**

At the heart of pragmatism (in my Deweyan version of it) is the concept of progress. Deweyan pragmatism aims to understand the possibilities of progress, as they arise for various domains of human life and activity, at the present time. I share Dewey’s aim of developing forward-looking accounts of progress in different domains of human life, so that human progress may become more systematic and sure-footed (although it is possible that, sometimes, progress can only be judged retrospectively). Naturalism contributes to these efforts by attempting to dissolve forms of superstition, often deriving from metaphysical extravagance and speculative epistemology. The pragmatic naturalism presented in these lectures aims to provide clear accounts of progress in the sciences, in the supposedly a priori disciplines of mathematics and logic, and in values. I shall argue that progress with respect to values is fundamental to all forms of progress.
Lecture 1: Scientific Progress and the Search for Truth

Commentator: Professor Michela Massimi

A common view of progress in the sciences (and more generally with respect to factual knowledge) takes it to consist in the accumulation of truth. In the course of history more and more is learned about the world in which we live. (The use of the passive is important here: it avoids issues about who exactly gains this knowledge.) Over half a century ago, Thomas Kuhn challenged views of this sort. He emphasized the conceptual changes that occur in major scientific advances, and worried about appeals to truth, understood as correspondence to reality.

I begin with considerations complementary to Kuhn’s. Scientific progress cannot be teleological, if the supposed goal concerns the attainment of something like “systematic truth”, some “final theory”. The idea of “the whole truth about nature” is arguably incoherent, and surely vastly outstrips human capacities. Nor can the teleologist take refuge in supposing a class of fundamental laws sufficient to generate any truth about nature that might interest someone. The disunity of the sciences is now a commonplace.

As Kuhn saw, scientific progress is driven from behind. Advances consist in problem-solving (a thesis elaborated in more detail by Larry Laudan). But what counts as a problem? And what is it to solve a problem? The central project of the lecture will be to address these questions. A principal conclusion is that the idea of seeking the truth grows out of a prior concern with solving problems - originally practical problems.

Scientists announce progress in their fields by presenting the answers to questions they have previously posed. They judge which questions deserve pursuing. To some extent they are constrained - now that science is no longer a hobby for “gentlemen, free and unconfin’d” - by the groups that fund their research. (In practice, however, investigators usually find ways to pursue the questions their research community selects as important.) Should scientists and their sponsors be the final arbiters of significance? Historical cases give us pause. Between 1900 and 1925, studies of heredity apparently made striking progress, as more properties of the “Mendelian factors” - genes - were disclosed. Yet this research community also focused on questions about the causes of human traits and behavior, some of them amusing (genes for “thalassophilia”), others with sinister social implications (genetic bases for racial and ethnic differences). Eugenic research inspired policies to turn back migrants seeking refuge from turmoil and persecution.

Gains in knowledge should contribute to human well-being and to social health. What specialists identify as progress is thus subject to a further test: does it answer to the needs of the community (often the entire human population) within which the advances will be distributed? Moreover, the test should not appeal to the preferences and values people actually have. In the 1920s, eugenic policies might well have enjoyed popular support. Rather it is judged by what the human community ought to value. An appeal to value progress is implicit here. The sciences are conceived as providing resources for the common good. My approach to that (elaborated in previous work) views the common good as identified through deliberations meeting particular conditions (Lecture 3 will say much more about this).

The notion of a significant problem is thus value-laden. To solve a practical problem is to advance projects that were previously stalled. To solve a theoretical problem is to produce an answer to the question posed, one that is “true enough”. The account of truth I shall develop begins from the elementary idea that we are warranted in adopting an answer as true enough when it answers the needs and wants giving rise to the question. By following that adoption strategy, research
communities converge to the kind of truth favored by William James: they approximate what works “in the long run and on the whole”. I shall conclude by suggesting that a modest notion of correspondence can be resurrected, one that honors James’ insight that the world in which we live is structured by our cognitive capacities and by our evolving values and interests. Understanding this modest conception of correspondence enables us to appreciate how the idea of a search for truth grows out of inquiries originally directed towards solving practical problems.

Lecture 2: Progress in Mathematics and Logic
Commentator: Professor James Conant

Western philosophy has been dominated by ideas about mathematics and logic that have, I believe, dabbled in mysteries and thereby done much mischief. Even many committed empiricists have made exceptions for the “formal sciences”, holding that these were known a priori and concerned with an abstract, non-physical, reality. Metaphysicians and epistemologists have exploited these bridgeheads to sprinkle ‘a priori’ over various firm beliefs for which they could not provide evidence, and to defend conjectures about aspects of reality towards which they could only gesture. Exceptionally talented philosophers have indulged in this practice: Derek Parfit’s defense of his ethical non-naturalism is a case in point.

The aim of this lecture is to lay these ideas to rest. I begin with mathematics, and with the ontological questions. An obvious way of approaching the content of mathematics is to ask what happens when mathematicians make new discoveries. Consider four examples: the acceptance of complex numbers (originally “imaginary” numbers); the elaboration of non-Euclidean geometries; the emergence of the concept of an abstract group; the development of linear algebra (from the search for quaternions, through the elaboration of the concept of a vector space). In all these instances, detailed historical accounts reveal how mathematicians struggled to arrive at formalisms and rules for symbolic manipulation that would allow them to answer questions previously held as significant. Pragmatic considerations enter. The new formalisms turn out to be useful tools (they aren’t merely “subtile and useless”). How does this kind of work relate to some abstract realm, disclosed in the arduous work of trying out ways of using symbols?

Following the later Wittgenstein, I advise attending to the surface phenomena. Mathematical practice begins by constructing notation for engaging in particular activities: rearranging and tallying small groups of objects, measuring land, and so forth. Those who continue to explore the resultant systems, playing games with the notation, are led to new questions. Progress consists in finding new ways to extend and expand the formal systems so as to answer questions identified as significant. (I shall argue that the notion of significance involved in the case of mathematics is related to that arising in the case of the natural sciences [Lecture 1]: in both instances, there is an initial concern with addressing practical problems and an interest in finding results that are as general as possible; but aesthetic considerations – and possibilities of play – enter into mathematics in ways typically absent from the natural sciences.) Significance accrues from facilitating actions and empirical inquiries, from finding general methods for achieving symbolic results previously only available in special instances (Descartes rightly boasted that his analytic geometry could resolve locus problems nobody had dared to attempt), from forging connections (often aesthetically satisfying) across fields, and from inventing new games people find entertaining (Conway’s “game of life”). Although his program was doomed, Hilbert was fundamentally correct.
The picture that emerges is of a tradition, one that produces tradition-dependent knowledge by fixing some complexes of expressions as “obvious”. As Quine recognized, what counts as obvious is made so, and the justification for the treatment lies in the progressive qualities of the tradition giving rise to the making. The need to invoke some mysterious “a priori” means of knowledge dissolves. We should abandon references of this sort.

Logic should be understood along similar lines. It emerges, as Dewey saw, from prehistoric efforts to find methods of successful inquiry. The history of logic reveals sequential attempts to characterize those types of inference that work well in the formation of belief. Frege’s achievement was to devise a way of extending mathematics to generate the hoped-for systematization. Inverting the philosophical thesis for which he is most famous, we may count logic as a branch of mathematics, sometimes useful in scrutinizing human reasoning, sometimes even helpful in understanding the virtues or defects of mathematical proofs. But the link to reasoning becomes ever more tenuous. Contemporary logicians are usually contributing to a special branch of mathematics.

Lecture 3: Progress in Values
Commentator: Professor Cheryl Misak

Sometimes, it seems, individuals and societies make moral progress. The most obvious instances are social. Slavery is rejected, opportunities for women are expanded, people attracted to members of their own sex are no longer reviled. Dewey’s hope of making progress of these kinds more systematic and sure-footed inspires an effort to understand what moral progress is, and we might begin that project by focusing on the historical paradigms. What kinds of actions or observations led some people or groups of people to take steps now viewed as progressive? What factors checked the advances or led to regress?

As with the sciences, the idea of moral progress as approximation to the complete moral truth proves absurd. Moral progress consists in solving some problems found in the current moral practice. As in the case of mathematics, historical exploration helps, by dissolving the idea of a pre-existing standard to which moral discoveries conform more closely. Yet, whereas in the mathematical case, there are well-understood criteria for identifying significant problems, their counterparts for morality are lacking. So an account of moral inquiry, one that offers methods of recognizing moral problems and appraising proposed solutions, is required.

The account of moral inquiry undergirds the notion of moral progress, and thereby gives substance to the concept of “human welfare” and “the common good”, deployed in Lecture 1, and implicit in Lecture 2. For both the natural and the formal sciences, criteria of significance are ultimately answerable to considerations of whether adopting them would be progressive with respect to values.

I develop my account of moral inquiry by using the historical exemplars. At their heart lie ventures in which “the cries of the wounded” (James) become audible, and are (eventually) addressed. So I propose a method that responds to complaints by instituting conversations aiming to embody three ideals: first, they are inclusive; second, they use the best available factual information; third, they are mutually engaged – the participants are committed to finding an outcome all can live with. Deliberations of this kind can be viewed as distilling the more positive
aspects of the paradigm cases. As I’ve argued elsewhere, they are also likely to have featured in the long history of human moral life.

Sometimes, however, the wounded don’t even cry. A second main feature of the examples is the prevalence of false consciousness. Oppressed people accept an ideal of their own lives assigned to them by their oppressors (often individuals – like slaveowners – but sometimes structural conditions within the society – a widely accepted sexual division of labor). Thus, during the past two centuries, slaves have sometimes endorsed the view that a life pattern as free citizens on terms of equality with their erstwhile masters was not for them, women have accepted the claim that a life in the public sphere was inappropriate and doomed to frustration, and people attracted to members of their own sex have acquiesced in the view of themselves as perverted sinners. When false consciousness occurs on a significant scale, conversations of the sort commended by my methodology will break down. They must be preceded by ethical inquiry (where ethics embraces not only questions of how to act but of how to be). Conversations aimed at approximating the three conditions must take place with respect to the conventionally accepted ideals of the self, focused on whether restricting some ways of being to members of a particular group can be warranted. Undertaking those conversations often requires ethical experimentation.

To the extent that there is time (and more extensively in any published version) I want to explore ethical questions more broadly, considering ways of making progress with respect to how to live and how to live together. This will involve consideration of progress with respect to aesthetic values, with respect to religion, and with respect to the scope of the law.