

Hoyningen Symposium
Systematicity: The Nature of Science



Tilburg, 22.02.2012

Synopsis

Main Speaker: Professor Paul Hoyningen-Huene, University of Hannover

The lectures present the content of a recently finished book manuscript of Professor Paul Hoyningen-Huene (Hannover) bearing the same title. The main thesis of the book is: Scientific knowledge differs from other kinds of knowledge, in particular from everyday knowledge, primarily by being more systematic. There will be a commentary on each lecture. The commentators are F.A. Muller (Rotterdam), Julian Reiss (Rotterdam), and Manfred Stöckler (Bremen).

Organizers: Stephan Hartmann (TiLPS), Jan Sprenger (TiLPS)

Professor Paul Hoyningen-Huene

Paul Hoyningen Huene was educated at the University of Munich, Imperial College London, and the University of Zurich. He received a diploma in theoretical physics from the University of Munich in 1971 and a PhD in theoretical physics from the University of Zurich in 1975. He taught at the University of Zurich and the University of Berne and was a Visiting Scholar at MIT, hosted by Thomas S. Kuhn, from 1984-1985. From 1987-1988 he was senior visiting fellow at the Center for Philosophy of Science at the University of Pittsburgh and from 1989-1990 a senior research associate for environmental sciences at the ETH Zurich. From 1990-1997 he was professor for history and philosophy of science at the University of Konstanz, and from 1997 onwards he has been Professor for philosophy and Founding Director of the Center for Philosophy and Ethics of Science at the University of Hannover.

Hoyningens main research areas include general philosophy of science, dynamics of scientific theory change, especially in Kuhn and Feyerabend; reduction and emergence; ethics of science; metaethics; philosophy of logics, of physics, of biology, of history, and of psychology. His publications include “Context of Discovery and Context of Justification”, *Studies in History and Philosophy of Science* 18, 501-515 (1987); “The Interrelations Between the Philosophy, History, and Sociology of Science in Thomas Kuhn’s Theory of Scientific Development”. *British Journal for the Philosophy of Science* 42, 487-501 (1992); *Reconstructing Scientific Revolutions: Thomas S. Kuhn’s Philosophy of Science*. Chicago: University of Chicago Press, 1993; “Niels Bohr’s Argument for the Irreducibility of Biology to Physics”. In J. Faye, H. Folse (eds.): *Niels Bohr and Contemporary Philosophy*. *Boston Studies in the Philosophy of Science*. Dordrecht: Kluwer, pp. 231-255, 1994; and *Formal Logic: A Philosophical Approach*. Pittsburgh: University of Pittsburgh Press, 2004. For more information, visit his webpage.¹

¹<http://www.philos.uni-hannover.de/hoyningen.html?&L=1>

Lecture I: The Question What is Science? and the Answer.

Lecture I begins with a few historical and systematic remarks concerning the historical setting in which the title question What is science? is being asked. Furthermore, I will explain how exactly the question should be understood. Most importantly, science is to be understood in a wide sense, including the social sciences and the humanities, as in the German Wissenschaft. Then, I shall give an answer to the question What is science?. The claim is that scientific knowledge can be distinguished from other forms of knowledge, especially from everyday knowledge, by its higher degree of systematicity. This answer will be qualified and clarified. The clarification explicates the central concept of systematicity. It turns out that the relevant concept of systematicity has to be made more concrete in nine different dimensions.

Lecture II: The Justification of the Answer

In Lecture II, the answer to the title question will be further elaborated and justified. The elaboration concerns the nine dimensions in which, according to the given answer, science is more systematic than other forms of knowledge. These nine dimensions are descriptions, explanations, predictions, the defense of knowledge claims, critical discourse, epistemic connectedness, an ideal of completeness, knowledge generation, and the representation of knowledge. The necessarily sketchy justification of my answer consists in various examples from various fields of research that exemplify how scientific knowledge is more systematic than other forms of knowledge in those nine dimensions.

Lecture III: Comparison with Other Answers, and Consequences

In Lecture III, I will compare my answer with alternative answers to the question What is science? which have been given in the history of philosophy. This includes Aristotle, Descartes, Kant, Feyerabend, and others. My heuristic hypothesis will be that the earlier answers to the title questions were not just wrong but they were one-sided in one sense or the other. This is due to the less developed state of the sciences in the past on the one hand and the progress in the philosophy of science on the other. Finally, I will

discuss some consequences of the given answer. These include the genesis and dynamics of science, the relationship of science to common sense, normative consequences, and the demarcation of science from pseudo-science.

Program

9:30 - 11:00

Lecture I: *The Question "What Is Science?" and the Answer*

Commentator: Julian Reiss (Rotterdam)

11:00 - 11:30

Coffee Break

11:30 - 13:00

Lecture II: *The Justification of the Answer*

Commentator: F.A. Muller (Rotterdam)

13:00 - 14:30

Lunch

14:30 - 16:00

Lecture III: *Comparison with other Answers, and Consequences*

Commentator: Manfred Stöckler (Bremen).