

INTRODUCTION

The first of the three symposia on “Questioning Nineteenth-Century Assumptions about Knowledge” underwritten by the Gulbenkian Foundation was convened at Stanford University, 20–21 November 2004, to examine the contemporary debates relating to the status of “determinism” in the sciences, social sciences, and the humanities.

Participants were invited from a wide range of disciplines in order to insure the broadest variety of opinions possible. It was, however, assumed that all who took part either as authors of background papers or commentators were interested in the epistemological questions in one way or another and were ready to think about the possible limits of nineteenth-century approaches. This assumption was indeed born out by the lively, sometimes surprising, discussions of the contemporary epistemological horizon, both in terms of the problems and prospects of inherited perspectives and of possible alternatives and what they might entail not only for scholarly agendas, but for decision making in the real world.

The organization of the book mirrors the organization of the symposium. Each of the first three chapters comprises a background paper specifically authored for the occasion followed by an open discussion. Each of these first three sessions was chaired by one of the organizers. The discussions were wide-ranging, as we had hoped, and did not necessarily focus exclusively on the papers. The fourth session, chaired by the scientific secretary, began with comments by the organizers—in this case, a wrap-up by Immanuel Wallerstein and prepared remarks by Jean-Pierre Dupuy—and concluded with a final discussion on the myriad issues that had emerged over the two days of the symposium.

The first session opened with the presentation by Steve Fuller, “Freedom and Determinism in the Twenty-First Century: Prolegomena to the Rewriting of History.” Fuller argues the strong position that “the sphere of rational action is composed

by placing freedom and determinism in some normatively appropriate, empirically informed relationship of complementarity.” In juxtaposing overdeterminist and underdeterminist perspectives as two modal logics of history, Fuller proposes we imagine a time-travel visit with Nicholas Oresme. He illustrates how different the experience might be from the point of view of a philosopher or historian and goes on to defend the proposition that “past and present overlap more than both historians and philosophers normally presume.” In his discussion of Robert Fogel’s counterfactual analysis, Fuller draws a parallel between the time traveller and the historical revisionist.

The conversation that followed the presentation opened with the idea of overlap between past and present, then moved on to a broad discussion that included the relationship between technology and the development of knowledge, physical causal sequence versus narrative sequence and thus the relationship between science and history, the plurality of knowledges and the plurality of pasts, representation and action, time and contingency, alternative or possible futures, and finally the determinism exercised by the disciplines of knowledge production and the material consequences of the social status of the sciences.

The second session began with the presentation by Fernando Gil, “Mobile Order: Between Chance and Necessity.” Gil, the philosopher, who sadly has since passed away and thus will not be able to see this project come to fruition, takes us back to the beginning in his discussion of chance and necessity, with particular reference to Aristotle. He argues that this long-standing polarity is fundamental to our understanding of experience and closely related to the possibility of rational action, and he associates the developments in probability and statistics with Aristotle’s intermediate figures: the probable, the frequent, inclination, and the spontaneous. Gil concludes his contribution with illustrations of his argument taken from the world of grand opera.

Among the themes touched on in the discussion, several stand out: randomness and determinism; complexity and chaos; emergence; statistics, laws and simulations; language; and post-structuralism as a major contemporary challenge to the basic assumptions of modern science. The rich discussion of necessity, however, was

particularly noteworthy; it embraced arguments ranging from modern science and mathematics to God and religion, even considering arguments about the tenets of Calvinism. Another highlight of this discussion was the long consideration of the consequences of allowing intermediate terms to become original concepts as an alternative epistemological approach to reality.

The third session started with the presentation by Ivar Ekeland, “Determinism and Mathematical Modeling.” This discussion of determinism began with a reminder of Lavoisier’s basic law of chemistry, nothing gets lost and nothing gets created, and its similarity to Laplace’s view that for a far-seeing demon capable of instantaneous calculation the past and future of the universe would be as an open book. After commenting on the mathematization of determinism and its application in physics and biology, Ekeland turns to economic theory and models, the Bayesian approach as a way of completing economic theory, and the lack of models of the formation of beliefs in the Bayesian approach addressed by the theory of rational expectations and game theory. Finally, Ekeland ties the question of determinism in the social sciences to the question of control.

Among the issues animating the discussion period following Ivar Ekeland’s presentation the logical status and bases of the power of the field of economics figured prominently as did a debate over the stakes involved in getting rid of the concept altogether. Other questions addressed included dynamical systems and predictability; values, beliefs, and rule-based systems; the underlying nature of indeterminism and uncertainty in economic questions; and substantive versus formal rationality.

The final session of the symposium opened with remarks by Immanuel Wallerstein. He argues that historically, necessity—theological, philosophical, or scientific—has validated agency, but that now in a world that is, in Ilya Prigogine’s terms, at “the end of certainties,” it is time to develop a science of the plausible. Jean-Pierre Dupuy, in prepared remarks “Does Determinism Entail Necessitarianism?” compares Sartre’s philosophy of freedom with its extreme opposite, Calvinism, in relation to Fernando Gil’s “mobile order.”

The symposium wrapped up with a series of reflections on the role and function of discussions and debates such as those that had taken place over the two days. A

concern for the future, and how to approach it, was evident: Participants considered what counts as a “catastrophe” and what time scales pertain to human action; how the structures of knowledge expand our concern, for instance, to shape real human social systems that include ecosystems; and how thinking about the possible rather than the necessary, may be a more winning strategy for our times.

Finally, we would be remiss were we not to recognize and voice our appreciation for the exemplary staff support all phases of this symposium received from Donna DeVoist, along with Rebecca Dunlop and Susan R. Thornton, at the Fernand Braudel Center, and Socoro Relova, in charge of local organization at Stanford. Their cheerful, problem-solving approach contributed greatly to the success of this event.

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