## INTRODUCTION

Pollowing the 2004 and 2005 meetings held at Stanford University and in Paris, dealing with "determinism" and "reductionism" respectively, the third of the three symposia on "Questioning Nineteenth-Century Assumptions about Knowledge" underwritten by the Gulbenkian foundation was convened at Binghamton University, 3–4 November 2006. The subject of this meeting was "dualism" 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 finally participated 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, and 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 the background paper specifically authored for the occasion followed by an open discussion. These three sessions were each 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—Jean-Pierre Dupuy opening with prepared remarks and Immanuel Wallerstein again offering an overview of the issues as they appeared to him to have developed during the first three sessions—and concluded with a final discussion on the many issues that had emerged over the two days of the symposium.

The first session opened with the presentation by Jennifer Hudin of the paper written by John Searle "Why Dualism (and Materialism) Fail to Account

for Consciousness." Searle, who was not able to attend the meeting, argues for overcoming traditional categories such as dualism—monism, reductionism—emergentism, materialism—mentalism, and determinism and randomness. His position is that materialists and dualists each are trying to say something that is true, but obsolete categories veil it in falsehood; the goal is to rescue what in each is true. Searle terms his approach "biological naturalism," claiming that consciousness is real; is caused by brain processes; is realized in the brain; and functions causally. Consciousness and its qualitative subjectivity are causally but not ontologically reducible to their neuronal substrate; they are, argues Searle, "part of the ordinary physical world like any other biological phenomenon."

The first part of the discussion period was primarily concerned with Searle's views and what was variously termed the observer-dependent and observer-independent distinction—the observer and observed, first person versus third person point of view, to include Descartes and other possible forms dualism might take—and complexity and consciousness. The conversation continued around the issues of language as mediator and the third person as a consensus about first person points of view and how the actual solution might not be which is true but how the two could be true simultaneously. Among others, the issues of the relation of dualism to ontology—individuals versus systems—and thereby to social action and consciousness as the non-mundane exploration of the spirit or the qualitative "feel" it has, rounded out the session.

Andrew Pickering notes that his "After Dualism," which led off the second session, was written from the particular perspective of posthumanist science and technology studies. The challenge to the dualism of people and things and the exclusion of things from the social sciences and the humanities that originated with science and technology studies (STS) came with the focus on practice, that is, at the interface where the human and the nonhuman engage one another. With the emphasis on ontology, Pickering illustrates his argument concerning implications for contemporary politics and the linear notion of power—the building up of a counter-pattern—with such examples as the contrast between the work of Piet Mondrian and Willem de Kooning, the containment of the Mississippi River,

and multiple illustrations from the history of cybernetics, especially in the work of Ross Ashby, Gordon Pask, and Stafford Beer.

Much of the discussion following Pickering's presentation hinged on the modern versus non-modern, including philosophy versus the sciences, the two cultures—which it was noted are both within modernity. If indeed there has never existed non-modern, holistic, environmentally non-destructive societies as a counterpoint to modern society, then in what, if any, way would they differ, it was asked. One problem with the treatment of the issues raised was the absence of temporality and power relations, the political component. Another question was whether, in what way, and under what circumstances, human beings are capable of taking collective action in the face of long-term problems, especially given the systemic challenges, including the structure of the disciplines of knowledge, to decision making in favor of "in-between" alternatives.

The third session began with the presentation by Judith Donath, "The Imperfect Observer: Mind, Machines, and Materialism in the Twenty-First Century." She observes that most scientists today are physicalists, and she will focus on the nature of the mind as "one of the most contested areas in the dualist/physicalist debate." In this context, she explores the imperfectness and subjectivity of perception. Her argument is broken down into extended sections on "Dualism, Physicalism, and the Limits of Perception" and "The Intelligent Machine" with an "Epilogue: Some History." This last concludes that "neuroscience, cognitive science, and artificial intelligence will be the force behind the next wave of cultural upheaval."

The overall trajectory of the discussion following Donath's presentation evidenced a subtle shift from epistemological issues to contrasting ontologies. Issues raised included altruism and its relation to rationality—is it irrational—and how action is modeled, including the question of nature versus nurture; correlations and functionalism; dualism, "radical evil," and the modern world; and conversation and consciousness in human-machine interaction.

In his opening remarks to the fourth session, "Preserving Distinctions, Complexifying Relationships," Jean-Pierre Dupuy tells two stories that encourage us "to think through what we are doing." He moves on to discuss the nanotechnology,

biotechnology, information technology, cognitive science convergence, and ends with reflections on the "obsolescence of the human condition." In his wrap-up, Immanuel Wallerstein expresses surprise, first, that so much of the discussion turned on issues of ontology rather that epistemology; secondly, that the question of evil figured so prominently; and finally, that what he considers the most significant dualism in the world today, that of the two cultures—philosophy and science as two basically different ways of knowing—was not discussed at all. He is for the "in-between," an overcoming of the two cultures and reunification of our epistemological view, which he considers a minority position.

Issues raised in the final discussion included the questionable necessity of a transcendent nomos; individualistic approaches versus systems ontology; normativity and moral philosophy; rationality—material and formal—and how scholars might overcome the two-cultures divide; natural law and convergence; and the possibility, but not inevitability, of progress.

In closing, we would like to recognize and express our appreciation for the exemplary staff support all phases of this symposium received from Donna DeVoist, who was in charge of local organization in Binghamton, and Rebecca Dunlop and Katherine Ensor Pueschel, all of the Fernand Braudel Center. Their cheerfulness and can-do approach to problem-solving contributed greatly to the success of this event.

## NOTES

1. Since John Searle was unable to be present to respond to the discussion on his paper, he asked his collaborator, Jennifer Hudin, to attend and respond on their joint behalf.

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