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BOOK REVIEW

Catching up with technoscience studies

Don Ihde and Evan Selinger, Eds. *Chasing Technoscience: Matrix for Materiality*. Bloomington: Indiana University Press, 2003

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Chasing Technoscience: Matrix for Materiality, edited by Don Ihde and Evan Selinger, is well-suited for at least two specific audiences: those familiar with the technoscience studies literature and looking for the current research of major authors, and those new to the field looking for material to supplement core readings. The book proceeds with special focus on four key technoscience figures: Donna Haraway, Don Ihde, Bruno Latour, and Andrew Pickering. An interview with each of these authors, comparative essays written by technoscience scholars, and an original article by each of the four primaries are included. The editors' claim that *Chasing Technoscience* represents ''a state of the art'' look at the field is justified since, as I show below, the original pieces written by the four key figures represent samples of those authors' major contemporary projects.

This book fits into the catalogue of the small but growing field of technoscience studies, where researchers combine philosophical and sociological methods to investigate the roles technologies play in scientific research. Key issues in this field include the ethics of science and technology, and the effects of technology on the directions of science and on our lives more generally. The editors organize the book around the general issue of how the material world figures into scientific study, but all of the main issues of technoscience studies can be seen at work within the volume. For students of this field, such as those in an upper-level or graduate seminar, *Chasing Technoscience* presents material ideally suited to supplement reading of core texts, especially those written by the four authors focused upon here (e.g., Haraway's *Simians, Cyborgs and Women* (1991) or her *Modest Witness* (1997), Ihde's *Technology and the Lifeworld* (1990) or his *Instrumental Realism* (1991), Latour's *Science in Action* (1987) or his *We Have Never Been Modern* (1993), and Pickering's *The Mangle of Practice* (1995)). The book provides less a general introduction to the field, than a contemporary review for the already-initiated. The introduction and the interviews will help students to situate the four key figures

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within their larger bodies of work, within their criticisms of and alliances with others, and within the criticisms that have been leveled upon them. The summaries and analyses of the field offered by the writers of the comparative essays included here will be helpful to students struggling with the main figures' (sometimes esoteric) texts.

For the more seasoned technoscience readers, *Chasing Technoscience* will be even more appealing. The interviews reveal interesting insights into the complicated relationship each main figure has with his or her own previous claims, works, and current research directions. Only Haraway's interview is not original to this collection. Those familiar with the style of each of the primary figures will find entertainment in the careful, sometimes slippery ways those interviewed address criticisms. Another major advantage of the book is that it offers an original article by each of the primary figures, each of which contributes to their major contemporary projects. I will review these articles here.

A major project of Donna Haraway's career is challenging the distinction commonly held between the concepts ''nature'' and ''culture.'' One method she often uses for this project is the creation of ''figures,'' concepts, which she offers to confront and displace commonly used classifications. She then engages in detailed case studies of technologies and scientific practices which instantiate these concepts. Each figure she offers challenges the notion that natural things (such as material objects, or the findings of science) should ever be understood as apolitical or ahistorical. Her contribution here, the article ''Cyborgs to Companion Species: Refiguring Kinship in Technoscience,'' is a part of her contemporary endeavor to articulate her most recent figure: the companion species (see also, for example, Haraway, 2003a; b; d, 2006). The key example of companion species she investigates is dogs, explaining that ''Dogs are about the inescapable, contradictory story of relationships—co-constitutive relationships in which none of the partners pre-exist the relating, and the relating is never done once and for all'' (Haraway, 2003c: 63). A careful study of dogs shows that to understand these animals, one needs not only an awareness of their biology or genome, but also an awareness of a long history of domestication, breeding, and all sorts of other dog-human interactions. That is, to have an understanding of dogs, one must know something of human history, intentions, projects, and politics. As well, to have a complete understanding of human beings, one must know something about their constitutive and inextricable relationship with dogs. Understanding things to fall under the figure of the companion species reveals the ways that nature and culture are not completely separate concepts, and can show how human decision and action play a major role in constituting the world. More than the projects of the other major authors central to this volume, Haraway's work is outwardly political, explicitly feminist, and constantly aware of the dangers that come from assuming that truth claims about the nature of things can ever be made in a non-political way.

Don Ihde's article, ''If Phenomenology is an Albatross, Is Post-Phenomenology Possible?'' clarifies his understanding of the potentials of phenomenology, a central project of his career, and more specifically central to some of his most recent work (e.g., 2003b, 2006). He begins by reviewing the strawperson caricatures of phenomenology erected by adversaries in certain analytic circles of philosophy. Next Ihde reviews his impressions of his own contributions and major works that show the uses of phenomenology for research in the philosophy of technology. He has a special and atypical conception of phenomenology, one he considers naming ''post-

phenomenology.'' He understands phenomenology as explicitly non-foundational, non-universalizing, concerned with bodily relations to technology, and as having important overlapping features with pragmatist philosophy. Such a phenomenology is as much a methodology as it is a school of philosophy. Ihde says, ''the relativity of pragmatist and phenomenological analyses (not relativism) is a dynamic style of analysis which does not and cannot claim ''absolutes,'' full ''universality,'' and which remains experimental and contingent'' (Ihde, 2003a, 163). The most valuable feature of Ihde's article is that, similar to Haraway's, it traces a history of key aspects of his body of work through to their relationship to his contemporary projects. Ihde's article is the last of those by the four primaries and he is also the co-editor of the book, so he goes to greater lengths in his piece to draw together the links between his own work in phenomenology and the projects of Haraway, Latour, and Pickering than do the other authors.

Bruno Latour's contribution to this volume can be considered part of his larger ''critique of critique,'' or put another way, his analysis and condemnation of the iconoclastic attitude. In other works (e.g. 2002, 2004a, b) Latour exposes a trend he sees in contemporary thought. He claims that writers too often attempt to cheaply destroy one another's efforts with broad and shallow arguments, rather than carefully constructing detailed and specific works. In his article here, ''The Promises of Constructivism,'' he reviews the many rhetorical strategies used by those waging ''the science wars,'' those recent, rather acerbic debates in which scientists, sociologists, and philosophers have argued about the nature of scientific facts. For more than a decade, science wars combatants have squabbled about the status of ''social construction,'' or the notion that social processes play some essential role in constituting the reality of things (including and especially the results of science). He begins his reflections on social construction, amusingly, by lamenting that ''Everything I wanted to achieve, namely to associate reality and construction into one single dynamic term, has been wrecked like a badly designed aircraft'' (Latour, 2003, 27). Perhaps he can save the concept of construction from the misunderstanding and abuse it has taken from both sides of the debate.

Latour proceeds by showing the fault of typical rhetorical moves such as ''the more constructed, the more real,'' and ''things are *both* real and constructed.'' For Latour, the villains show up on both sides of the science wars and come in all stripes, including ''fundamentalist'' scientists, critical sociologists, and deconstructionist philosophers (though, frustratingly, Latour almost never explicitly names whom he is lambasting, leaving us unable to clearly determine whether he is representing his targets fairly). He concludes with a thought-provoking and fun analysis of a categorization of the different types of social construction offered by Ian Hacking in his book *The Social Construction of What?* (1999). In this book, Hacking lists the different sorts of social constructionists on a gradient in terms their political radicality: from the more innocuous ''things have an inherent history'' to the more radical ''things should be constructed differently.'' Latour lauds the way Hacking's list brings out the inherent political nature of debates over social construction, but he also suggests an amendment. Latour claims that fundamentalist scientists should be added to the top of the list. He declares that their politics of exclusion concerning who else should be allowed to talk about science must be thematized. Finally, he offers a list of his own which could replace Hacking's. Latour lists the political goals, or ''guarantees,'' that different social constructionist positions might claim.

Andrew Pickering's contemporary project remains the defense and further articulation of the claims made in his major book *The Mangle of Practice* (1995). He accomplishes this in recent work by offering additional case studies and philosophical elaboration (e.g., Pickering, 1991, 2002). Here, in his article ''On Becoming: Imagination, Metaphysics, and the Mangle,'' Pickering reflects upon the ontology of his philosophical system. More than any of the other three essays by the primary figures of *Chasing Technoscience*, Pickering's contribution represents an essential piece of his body of work. In *The Mangle of Practice*, Pickering lays out an account of scientific practice, which understands all of its parts (including both material objects and human goals) to be constituted as a complex, interrelated mixture. He sees much of science studies to be stuck in an epistemological mode that understands science to simply represent the things that exist in the world. Here, in ''On Becoming,'' he advances a Deleuzian conception of metaphysics that emphasizes the interrelations of parts, the imagination of possible futures, and the unidirectional emergence of new things. By articulating his understanding of *becoming*, Pickering hopes to upend the traditional metaphysics present in science studies, which he sees as stymieing imaginative thinking and producing philosophical contradictions. He claims, for example, that traditional metaphysics leads us to ''a paradoxical view of history in which it sometimes appears that the object of analysis is the vanguard of progress, but then, in a shift of gestalt, a mere symptom of its context'' (Pickering, 2003, 106). To articulate his view of becoming, Pickering uses illustrations such as evolutionary biology, the historical appearance of the steam engine, and cybernetics. By doing so, he attempts to provide new general concepts to be used by others who investigate the emergence of novel phenomena.

Part two of *Chasing Technoscience* is a collection of essays, which contrast the work of the four central figures with one another. These essays, which are a refreshing break from the thick and idiosyncratic styles of the primaries, are useful for their discussion and criticism of the claims and arguments of the main figures, for they resist getting too bogged down in the jargon of each figure's body of work. For example, in his ''Interdisciplinary Provocateurs: Philosophically Assessing Haraway and Pickering,'' Evan Selinger draws out the consequences of Pickering's unreflective use of philosophically loaded concepts. By not engaging with a history of philosophical debate over important concepts such as time or agency, Pickering's work fails to avoid the same problems that others have encountered in the past. Also, Robb E. Eason's piece, ''Hypertext: Rortean Links Between Ihde and Haraway,'' reviews a common criticism of Ihde's work, i.e., that it does not substantially engage with relevant ethical issues. Eason specifically addresses concerns that Ihde's (as well as Merleau-Ponty's) phenomenology of human bodies is not sensitive to the different political aspects of specific bodies (such as gender or ethnicity).

I recommend *Chasing Technoscience* to researchers interested in the interdisciplinary and innovative field of technoscience studies.

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