

The Matter of Technology:
A Review of Don Ihde and Evan Selinger (Eds.)
Chasing Technoscience: Matrix for Materiality
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Chasing Technoscience embodies a trajectory that every PhD student, and everybody interested in Science and Technology Studies and the Philosophy of Science and Technology, should follow. It interviews some of the most important scholars in the field, reads some of their most recent texts, critically analyzes their positions and relates them to each other. The book can be considered an 'advanced introduction' to the interface between empirically oriented research of science and technology on the one hand, and the philosophy of science and technology on the other.

The scholars chosen to represent the state of the art in these fields are Donna Haraway, Don Ihde, Bruno Latour, and Andrew Pickering. The book consists of two parts. Part One contains an interview with and an article by each of these four scholars. Part Two contains six chapters in which these four positions are analyzed, annotated, compared, and criticized. Although the second part is certainly worth reading, the first part of the book is the most exciting. This is especially true for the interviews, which offer interesting new insights in the work of the authors discussed.

Chasing Technoscience aims to give special attention to the importance of materiality for understanding science and technology and their cultural roles - the book's subtitle even reads "Matrix for Materiality" - but beside materiality there are two other themes running through the book: the relation between empirical and philosophical research; and the role of normativity in STS and the philosophy of science and technology.

An important theme in the book is the relation between philosophical investigation and empirical research. The book opens with a profound and entertaining interview with Latour, in which he explicitly characterizes his work

as 'empirical philosophy.' Whereas classical STS defined itself in opposition to philosophy – disparagingly indicating it as 'armchair philosophy,' devoid of any contact with the reality it attempts to analyze - Latour defines himself as a philosopher who "tries to get at classical philosophical questions through the methods of fieldwork and case-studies." He states, albeit somewhat ironically, that "deep down," his "real interest is in metaphysics." Latour adds that he practices metaphysics in an empirical way, by studying "the different truth production sites that make up our civilization": science, technology, religion, and law. For him, metaphysics is not the building of fundamental categories but to "monitor the experiment with which the world makes itself" in order to see "how all the ingredients of the world – space, time, agency – of what will compose a normal metaphysics are actually redone locally." This empirical work does not add to a systematic 'philosophy.' As Latour says: "I produce books, not a philosophy." His interest is with the specific field of reality he is studying, not with the frameworks to study these fields.

All authors in the book work on this edge of empirical research and philosophical analysis, with Latour being closest to empirical research and Don Ihde being the least empirically oriented. Ihde's (post)phenomenological work on the mediation of perception and the role of instruments and image technologies in scientific research does take concrete practices of 'truth-making' as its objects of research, but rather than invoking ethnographical methods Ihde applies and expands phenomenological notions like intentionality, embodiment, and hermeneutics to analyze the practice of scientific imaging. Ihde is not primarily interested in doing justice to the actors, but in understanding why phenomena are given in specific ways in specific circumstances, relating the ways in which things are given to the technologies that help humans perceive and interpret them.

A second theme in the book, as the book's subtitle expresses, is materiality. Actually, not simply materiality is the main issue here, but, more broadly, ways to get beyond human-centricity and subjectivism. After decades of contesting realism and objectivism, by showing how realities and objectivities are socially constituted and defined, it seems that time has come to make the opposite movement and show how the social is materially mediated. Materiality is no blank projection screen for human interpretations, but plays an active role in our technological culture. Science and technology should not only be understood as the *outcomes* of social processes, but also as their *input*.

The main discussion here concerns material agency: are human beings the only entities able to 'act'? Latour refuses to make an *a priori* distinction between humans and 'nonhumans' but rather considers this distinction a specific (modernist) way of ordering reality. Haraway's entire work aims to deconstruct the nature/culture distinctions that pervade our thinking, as her work on cyborgs shows, as well as an intriguing text on dogs as nature/culture hybrids, which is included in the book. Nature (with its 'objects') and culture (with its 'subjects') cannot be had separately, and each mixture of them ultimately is a political configuration.

Pickering, however, holds on to a form of asymmetry between humans and non-human entities. He understands human beings in terms of their intentionality, which he loosely defines as 'goal-directedness.' This asymmetry between subject and object, however, should not be seen as an *a priori* distinction but as a deliberate choice to be better able to describe reality. Also Ihde refuses to give up the modernist subject-object distinction. He considers it more fruitful to focus on the ways in which subjects and objects interfere and mix. He does not want to distance himself from humanist *values* but does consider his work post-humanist in the sense that the primacy of the 'pure' human subject needs to be given up and replaced with a human subject which embodies all kinds of technological objects. The book makes explicit interesting differences in positions here, but it would have been even more interesting if these differences were analyzed and unraveled further.

The third theme in the book is normativity. In STS, this theme is receiving ever more attention, as well as in the philosophy of technology. Again, the book lays bare interesting views of normativity in science and technology. Latour approaches morality as an object of study just like any other object: it is in the things to be studied, and the vocabulary with which to describe it needs to be obtained as much as possible from the actors themselves. Against this descriptivist approach, Donna Haraway takes a normative starting point in her analysis: feminist engagement. She stresses that she regrets that in STS circles, her Cyborg Manifesto is often read without adequately recognizing its feminism. Pickering, in his turn, links normativity to aesthetics, and expands his recent work on 'becoming' (as opposed to 'being') to a "politics of becoming," which is a "politics of experiment," "continually trying this and that without pretending to know the outcomes in advance."

The humorous article “Do You Believe in Ethics? Latour and Ihde in the Trenches of the Sciences Wars,” by Aaron Smith, in the second section of the book, deals explicitly with normativity. This article perfectly illustrates the relevance of an ethical perspective in contemporary technoscience studies, but also shows how difficult it is to incorporate state-of-the-art insights, like those in nonhuman agency and post-subjectivism. In his article, Smith attempts to extend the work of Latour and Ihde to ethics. He shows how Ihde’s work makes it possible to conceptualize that human intentionality can be operative ‘through’ embodied technologies, and how Latour does away with an exclusively human interpretation of intentionality, attributing agency to chains of actants rather than a ‘prime mover.’ Smith concludes that Latour’s work is problematic with regard to ethics: “The consequences of rejecting the limitation of prime mover status to humans would be to take the implausible position of attributing prime mover status to non-humans such as automatic doors, guns, automobiles, and atomic reactors.”

Yet, this criticism passes over precisely what is at stake in much state-of-the-art philosophy of technology and technoscience studies: the move beyond subjectivism and humanism, and toward materiality. Just like Latour’s work on nonhuman agency, Ihde’s work on the hermeneutic roles of technologies does not only show that *human* intentionality can be ‘stretched’ over artifacts, but also that *artifacts* have an ‘intentionality’ to shape human decisions and actions, without this role having been explicitly delegated to them by their designers or users. In order to understand ethics and morality in our late-modern technological culture, we need to move beyond the strict modernist separation of subject and object, which causes our current problems with understanding the mediating roles of technologies and the mediated character of human actions in terms of morality. If we hold on to the autonomy of the human subject as a prerequisite for moral agency, we will never be able to understand the moral character of the ways in which our actions are co-shaped profoundly by the technologies around us. Therefore, a better connection with the other themes that run through the book – the possibilities of an ‘empirical philosophy’ and the move beyond subjectivism – could have informed a richer perspective on the moral character of technoscience than holding on to ‘prime movers’ which eventually need to be purely human.

Nevertheless, the variegated and profound treatment of these themes makes *Chasing Technoscience* a very interesting and engaging book about some important state-of-the-art themes in STS and the philosophy of science and

technology. If the book has identified a correct image of the state of the art in the field, there are some exciting years ahead of us.