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***Materiality and Organizing: Social Interaction in a Technological World*, edited by Paul M. Leonardi, Bonnie A. Nardi, and Jannis Kallinikos. Oxford, UK: Oxford University Press, 2013. 365 pp. \$45.00. ISBN 978-0-19-966406-1 (paper).**

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The chapters collected in *Materiality and Organizing* all engage in various ways with concepts of materiality as they relate to sociotechnical practices. They are motivated by the recognition that materiality plays a significant role in social and organizational practices, and they demonstrate that there are almost as many conceptions of materiality as there are researchers. While some take materiality proper as their point of departure, others engage with concepts of sociomateriality, materialization, or simply material. However, the editors state in their introductory chapter that the intent of the book is not to reach clear definitions, but rather to bring various perspectives into conversation with each other in order to reveal common ground and clarify differences. As might be expected, the common ground seems to be found at a high altitude, while the differences become apparent in more specific concerns, theoretical orientations, and goals.

The counterpoint of materiality to which it is implicitly opposed is immateriality or virtuality, that hallmark of early discourse about cyberspace and all things digital. It is perhaps unsurprising that breathless descriptions of a newly digital order would eventually lead to a desire for solidity. Materiality emphasizes the ‘real’ aspects of technologies, from their constitution to effects, and in a way that considers both technical and social agencies without succumbing to either determinism or constructivism.

The main theoretical touchstones referenced here are the work of Leonardi and Barley (2008) and Orlikowski (2007, 2010), who draws substantively on Barad’s (2003, 2007) notion of agential realism. This latter position in particular rejects subject/object dualisms in favor of a notion of constitutive entanglement that sees entities and agencies as mutually constituting each other and resolving into particular configurations only in practice. The concept used here is sociomateriality, a term that Leonardi (Chapter 2) says “reminds its readers (a) that all materiality... is social in that it was created through social processes and it is interpreted and used in social contexts and (b) that all social action is possible because of some materiality” (32). It is also, he argues, best used to point to specific “sociomaterial practices.” These aspects of (socio)materiality as reminder and as pointer to practice run deep throughout the chapters, even if they play out in different ways.

The book is organized into sections that reflect varying conceptions of and approaches to materiality (and its variants). The introductory chapter by the editors sets the stage for this current concern with materiality and also places it within broader problematics, such as those of determining the roles of structure versus agency in social life. The next section is on “Theorizing Materiality,” and its chapters address the concept and its use most directly and precisely. Faulkner and Runde (Chapter 3), for instance, in a lucid and brilliantly argued chapter, articulate, examine, and critique the ontological claims entailed in conceptions of sociomateriality.

The main body chapters are organized according to their views of materiality as performativity, assemblage, affordance, and consequence, respectively. The section on “Materiality as Performativity” contains chapters that examine how certain practices, such as ranking (Pollock, Chapter 5) and rating (Scott and Orlikowski, Chapter 6), are both enabled and shaped by the technologies and technological standards that underlie them. “Materiality as Assemblage” is a section that groups together chapters that look at the functioning of sociotechnical systems in terms of how their configuration, function, and physical components together create certain dynamics. Ekbia and Nardi (Chapter 8), for example, describe how people can be objectified and inserted into large technological systems that require particular kinds of participation in order to function, a phenomenon that they term inverse instrumentality. “Materiality as Affordance” is a perspective that is generally concerned with possibilities for action and the qualities of that action. For example, Groleau and Demers (Chapter 13) look at how different types of artifacts participate in different styles and processes of concept creation in different architectural practices. “Materiality as Consequence” is an even more practical approach that sidesteps the thorny issues involved in trying to pin down what is actually ‘material’ about information technologies, as it looks at material consequences rather

than antecedents. In this section is also the chapter with the conception of materiality that is arguably the farthest removed from physical matter: Burrell's (Chapter 16) account of the materialization of a rumor that there would be an earthquake in Ghana.

The single chapter in the final "Epilogue" section is by philosopher of technology Albert Borgmann who, like Barad, grounds an understanding of matter and reality in contemporary physics. He traces attention to materiality back to a concern that what matters, and matters precisely because it is material, is slipping away and being replaced by fleeting technological information. As he states, "What matters needs to have depth. It must be grounded without rupture and traceable without loss of meaning. Life is lived out in the interval between such events. That interval is the spine of your identity, and like the space-time interval between events in special relativity, it remains no matter your changing frames of reference" (345).

While insights from quantum physics have clearly been quite fruitful in enabling new ways of thinking about the 'entangled' relation between technological and human entities, there do seem to be some sticking points when it comes to translating them so that they apply to social phenomena in the world of lived experience. After all, even within physics the theories that deal with the micro and macro-levels of reality are currently incommensurable and the gap between micro-level physics and macro-level sociality seems perhaps even greater. Also, one of the main lessons imported from physics is that there are no such things as independent entities and agencies and that boundaries between things are drawn and specific constitutions defined only in particular moments. The problem that this leaves for studying technology and social interaction is that it suggests that its object is fundamentally ephemeral and just outside of one's grasp. It does seem telling that materiality—the quality of being material—is the term used here. It is nebulous, flexible, and evocative. In the estimation of Kallinikos (Chapter 4), "the term has grown to an inflating buzzword, an empty vessel able to contain an amazingly large and ambiguous web of significations" (83). This is perhaps part of the reason why in these studies of materiality the analysis sometimes seems to float above the ostensibly grounding weightiness of actual matter.

This book will be of interest to anyone who studies social interaction in relation to technologies. Although information systems and organizational studies research has provided the historical backdrop and current audience for much of this strand of research, it is also highly relevant for those who take other approaches to studying technology and social life. There is also an increasing interest in materiality within the contexts of new media studies (e.g., Van Den Boomen, et al. 2009) and interaction design (e.g., Robles and Wiberg 2011), which could also benefit from the perspectives presented here. If this book is a conversation with a variety of voices, it is one that will hopefully lead to more and broader conversations regarding materialities that matter in our technological world.

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