

Diane M. Rodgers:
Debugging the Link between Social Theory and Social Insects
Louisiana State University Press: Baton Rouge 2008. 214 pages

Diane Rodgers' book presents a critical reading of the intertwined and complex co-evolution of entomology and sociology in the nineteenth and early twentieth centuries. During the co-evolution, entomology and sociology have drawn comparisons between insects and human social organization. Making analogies and comparisons across disciplines is a scientific practice that involves specific social and political concerns, and, therefore, does not produce neutral representations of phenomena. Entomologists have described the ability of insects to organize themselves in anthropomorphic terms, which reflect the dominant social structures. Sociologists have compared human societies with insect societies, and claimed that human societies organize themselves hierarchically, just like the insect societies they use as an analogy. Rodgers aims to uncover naturalizing practices in comparisons made between natural and social worlds. Rather than accepting these comparisons at face value, Rodgers deconstructs these practices using methods from discourse analysis and social constructivism.

In Rodgers' description of the interactions between entomology and sociology, the construction of analogies and metaphors that figure prominently in the models used by entomologists and sociologists is of key importance. In scientific practice, the term 'model' has

a variety of meanings: it may be used as a noun (a formalized representation of a theory, system, or phenomenon), an adjective (connoting a degree of perfection, i.e. a model husband or wife), and a verb (to reveal or demonstrate what something is like). Scientific models comprise these different meanings. First, they involve formalized representations of phenomena or systems. Second, these representations contain a degree of idealization since they are abstractions of reality. Third, scientific models reveal – by abstraction and manipulation – the properties of reality considered relevant.

Rodgers' book can be read as a suggestion that these connotations of the term 'model' should be studied simultaneously. It is known that the analogies and metaphors used in scientific models are not neutral though they may be presented as such. The assumption of neutrality renders the contextual dimensions and underlying assumptions of models opaque or invisible. In the case of entomology and sociology, metaphorical language is embedded in the analogies that establish relationships between the objects of study in both fields. As a result, the history, construction, and value-laden properties of these metaphors and analogies are rendered invisible.

Rodgers analyses different ways in which entomology and sociology reinforced each other, and how this

co-construction naturalized notions related to race, class, and gender. This process of naturalization was fueled by a 'legitimizing loop' between entomology and sociology. Interactions between entomologists and sociologists provided the disciplines with epistemic currency as credibility was borrowed from both social and natural worlds. Comparisons made between these two disciplines facilitated the development of general laws of sociality and social organization. The comparisons were seen as objective, despite the fact that they had origins in particular social contexts and contained specific notions of hierarchies, race, class, gender, intelligence, and evolutionary sophistication of societies. As a result, entomology and sociology often described their subjects by using a colored and one-sided vocabulary. Rodgers points out that scientific models often have universalistic tendencies, and are never a simple comparison between familiar and less-familiar domains. Through the use of scientific models, metaphors and analogies "can become literal, be incorrect, or both" (p. 93).

'Reification' or 'mystification' (p. 23) of terms downplays the historical and social details of their creation. Recovering these details can be accomplished by a process of deconstruction, which entails a sensitization to the historical time period, political persuasion, and cultural location of the human creators of analogies and metaphors. According to Rodgers, the process of denaturalization or 'debugging' situates the practices of naturalization in their historical and cross-cultural contexts, thereby revealing the legitimating loop "that reinforced an interlocking hierarchical social structure" (p. 2). In order to counter the mystification of the connection between practices of entomologists

and sociologists and their supposedly objective descriptions of phenomena, Rodgers uses a combination of discourse analysis and social constructivism. According to her, this facilitates deconstruction of the classification schemes and categories, and focuses on the boundary work between disciplines. Rodgers uses insights from feminist and postcolonial studies to incorporate social location and relational dynamics of race, class, and gender into her research. This provides critical elaborations on how descriptions have acquired objectivity in the eyes of those who mobilize them: "[u]nderstanding that theory, classification, and language are all intricately interwoven with actual social relations takes one beyond the assumption of an innocent anthropomorphism or the scientific prerogative of objectivity claims" (p. 39). The methods advocated by Rodgers thus provide necessary tools in describing the power relations at work in the naturalizing dimensions of scientific models, as well as articulating alternative models as possibilities for intervention.

Analyzing the history of entomology and sociology is important for a variety of readers, let alone researchers currently working in these fields. Rather than taking disciplinary formations for granted, Rodgers discusses demarcations between disciplines and sheds light on the processes that establish them. She discusses how theories were able to gain prominence, despite alternative points of view. The book also describes how the legacy of scientific disciplines is carried over into new paradigms and research, even though contemporary developments appear to shift away from hierarchical explanations. Rodgers suggests that the opacity of scientific models and construction of analogies and metaphors should be studied more

generally. Finally, this book informs the study of interdisciplinary work where the perceived success of one discipline is translated into a research agenda for another (i.e. computational humanities).

Some minor critical remarks can be made. First of all, it is not always clear what the term ‘debugging’ refers to. In common language, debugging entails removing elements of error. In Rodgers’ discussion of entomology and sociology, ‘error’ refers more to the irresponsibility of those constructing analogies and metaphors rather than to the errors in representing truth or fact. ‘Error’ is a term not easily incorporated into a social constructivist account of science. Second, Rodgers alludes to the use of ‘computer technologies’ and emerging epistemic formations around the notion of ‘self-organization’. The latter term points to the organizational order that emerges in insect and human societies due to interactions of the constituent parts of these societies. However, it remains unclear how future research should adopt the agenda of denaturalization in studying these new technologies. Third, the book could have benefited from discussing the practices

and the material and technological conditions of the production of scientific knowledge. Rodgers claims that models of self-organization tend to deemphasize the individual, and as a result “computer simulation programs and artificial intelligence that utilize these self-organizing models are also viewed as neutral sources of evidence about natural and social systems” (pp. 186-187). That is a bold statement that certainly does not apply to *all* actors within scientific communities and scholars studying these communities.

These minor critical remarks notwithstanding, Rodgers’ book is an eloquent description of the production of knowledge that serves as an important showcase of the necessity of critique. The book reveals a depth of scientific models that too often escapes critical inquiry. The book’s call to arms seems particularly apt in a time where the perceived robustness of scientific explanations increases.

Matthijs Kouw MA MSc
Faculty of Arts and Social Sciences
Maastricht University
m.kouw@maastrichtuniversity.nl