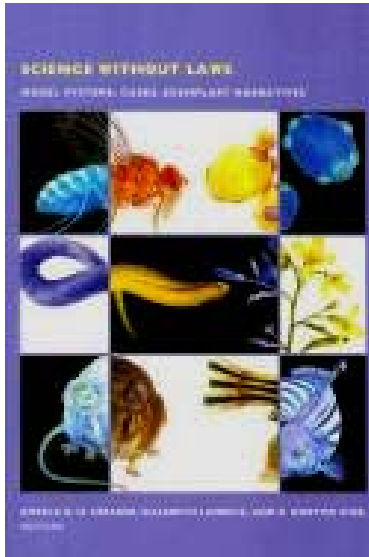


Book Review
Science without laws

Model systems, cases, exemplary narratives

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The text deals with the construction of knowledge in specific domain such as biology, geology, medicine and history. Can a biological model system be such an adequate and explanatory tool (object) to understand how a certain knowledge is built in a peculiar discipline?

Facing different aspects in the field of Biology, Simulations and Human Sciences the authors propose the reader a wide number of examples to think about. In every single case the rise of peculiar aspects is related to a lucid and interesting discussion. The *Biology* section starts with an article by Marcel Weber (*Redesigning the Fruit Fly: the Molecularization of Drosophila*, pp. 23-45) The author states that “the main advantage responsible for *Drosophila*’s reproduction success in molecular laboratories lies in the enormous *experimental*

resources associated with this organism” (24). When describing “how the first *Drosophila* genes were cloned”, Weber stresses that “cloning techniques transformed the gene from an abstract entity characterized by the phenotypic effects of mutations [...] into an object of direct experimental intervention” (38).

In *Wormy logic: Model Organisms as Case-Based Reasoning* by Rachel A. Ankeny (pp. 46-58), the leading idea is about “conceptualizations of model organisms as model”, that is to re-define the epistemological issues that cause a shift from a biological description (a so-called “case-based reasoning”) to the aspects of modeling, focusing on the epistemic process. Starting with the analysis of the nematode worm *Caenorhabditis elegans* Ankeny philosophizes on model organisms and their features “that serve as cases mediate between theory and the world [...] and come to be used in a tool-like manner to perform a range of tasks, perhaps the most important of which is establishing a framework within which to ask questions” (55).

E. Jane Albert Hubbard (*Model Organisms as Powerful Tools* pp. 59-72) proposes her way of analyzing the utility of model organisms in biomedical research. Model organisms are powerful tools: “starting with a phenomenon of interest to the investigator, the investigator chooses an organism that permits a great depth of understanding of the phenomenon” (60).

Last but not least, the article by Susan Sperling (*The Troop Trope: Baboon Behavior as a Model System in the Postwar period* pp. 73-89) switches the focus from a micro to a macro-level. The baboons as a “legitimate object of ethnographic/ethological study” offer a case-study from an evolutionary, model-systems based perspective. The article continues talking about data that primates’ observation had produced, in terms of “behavior of diverse species”.



Naomi Oreskes opens the second part of the book – about *Simulations* – with her article *From scaling to simulation: Changing Meanings and Ambitions of Models in Geology* (pp. 93-124). Models in geology shifted from a physical model to mimetic, theory models. And the shift brings in itself problems of scaling – “asking whether it was possible to capture the earth’s capacities on human scale – as well as those of method of hypothesis – asserting that demonstrating the potential of a causal agent did not prove its actual existence or effect” (93). The predictive modeling in earth sciences (see p. 120) is an epistemic knot even for the article by Amy Dahan Dalmedico (*Models and Simulations in climate Change: Historical, Epistemological, Anthropological and Political Aspects*, pp. 125-156). The epistemology of models had changed from the early 1930’s to the 1980’s onward. The author states that “in order to understand how scientific practices and knowledge results relate to each other, the construction of models needs to be historicized through a study of its workings and functions in different historical configurations of scientific research” (126). In the last paragraph of his work – *Anatomy of an Antireductionist Methodology* – the author proposes “three new epistemological aspects” that would “finally confirm the discrepancy [...] between the older epistemological discourse and contemporary model practices” (151-152). *The Curious Case of the Prisoner’s Dilemma: Model Situation? Exemplary Narrative?* closes the second part of the volume. Here Mary S. Morgan analyzes proper problems of the game theory.

Human science is the last section of the book. One of the leading concepts of this part is that of “extracting the universal from the particular” (12). So, the dynamics of the case history in psychoanalysis are the main theme of the work by John Forrester (*The psychoanalytic Case: Voyeurism, Ethics, and Epistemology in Robert Staller’s Sexual Excitement* pp. ???). Moving from single case to group case, the article by Clifford Geertz (*To Exist is to have Confidence in One’s Way of Being: Rituals as Model Systems* pp. 212-224) states that certain rituals – as the obligatory ones i.e. – can be assumed as model systems. “And it is for that reason that so many anthropologists, anxious to break into other imaginaries, have found in one or another instance of it [the ritual] [...] a strategic and convenient object of attention, a model system of a particular way of enjoying the real, of worlding the world” (222).

“Can the political history of classical Athens legitimately be regarded as a case study – an experimental system or exemplary narrative, useful for investigating various aspects of democracy and related phenomenon? This is the starting question Josiah Ober proposes” (*Democratic Athens as an Experimental System: History and the project of Political Theory* pp. 225-242), claiming that historical narrative as a “model system” has a use-value as useful as that of biological model.

From the universal to the particular, historical narrative as a model. These concepts reach the apex in the article written by Carlo Ginzburg (*Latitude, Slaves and the Bible: An Experiment in Microhistory*, pp. 243-263). The starting point (Auerbach’s *Ansatzpunkte*) is the work of Jean-Pierre Purry. Relating it with other – even explicit or implicit – cultural perspectives (from Weber to Auerbach, from the Bible to Marx), Ginzburg explains that “The case of Jean-Pierre Purry, that early prophet of the capitalist conquest of the world, stands a chance of knocking down some of the barriers thought to divide microhistory and theory” (255).



Mary Morgan's is the last section of the book (*Afterword: reflections on Exemplary Narratives, Cases and Model Organisms*, pp. 264-274). Given the fact that every single case serves multiple purposes and that "exemplary narratives differ in salient ways from model organisms" (265), nonetheless "they share the characteristic feature of being objects to be inquired into and objects to inquire with" (id.)

The relationship of both model or case to explanatory system may "change more fundamentally over time" (267). In order to let the features described in this book play its role and act as an explanatory tool, we have to use all of them applying every concept and epistemological thought to a wider and cross-cultural perspective, as well as to a vast range of research fields.

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