Review: A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming
By Paul N. Edwards

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Edwards, Paul N. *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming.*Cambridge, MA: The MIT Press, 2010. 528pp. ISBN 0262013924. US$32.95, cloth.

Global climate is one of the most pressing and misunderstood issues facing civil society in the 21st century. In a recent poll of Americans, “majorities... incorrectly believe that the climate often changes from year to year or that 'weather' means the average climate conditions in a region, suggesting that many people continue to confuse weather and climate” (Leiserowitz 2010). In addition, many Americans believe “computer models are too unreliable to predict the climate of the future (37%)” (Leiserowitz 2010). Perhaps in part due to poor scientific and technical grasp of the evolution of climate modeling and data interpretation, the subject is also linked to conspiracy theory and skepticism over global warming (Hickman and Randerson 2009; BBC News 2010). *A Vast Machine*, written by University of Michigan iSchool Associate Professor Paul N. Edwards, is a significant text that contributes to understanding "how we make climate knowledge" (p. xiv). Edwards' book not only offers an historical account of the evolution of the global weather information infrastructure, scientific acceptance of interactions between data and models, and includes discussion of “global atmospheric politics” and current controversies over global warming.

Using John Ruskin's (1839, p. 210) idea of the “moving power of a vast machine,” a “global weather observing system” (Edwards 2004), Edwards recounts the complex history of data collecting initiatives that contributed to what we know about climate “as the history of weather” (Edwards 2010, p. xiv). In a sense, the book is a case study in the philosophy of science in terms of how models and simulations are constructed, data interpreted, and standards adopted by epistemic communities. In writing this history, Edwards devises fresh concepts that serve as a conceptual framework. For example, *data friction* is tied to “making global data”; *metadata friction* reflects the “difficulty in recovering contextual knowledge about records” (Edwards 2010, p. xvi-xvii); *data analysis models* (used to “process historical weather and climate records”) and *climate knowledge infrastructure* (those national and international entities that observe, share, and link data historically to the present) show how communities construct climate knowledge in the form of environmental history and interpreting contemporary data. Of note, Chapters 8 through 10 relate to the “weather information infrastructure" between 1950 and 1980, the years the U.S. military took interest in weather data, especially in attempts to model global nuclear fallout patterns that “could be used to trace flows back in time to an origin point, thus determining the approximate locations of secret test sites” (Edwards 2010, p. 209).

However, the text is not without its flaws. No separate references section is provided; instead, all references are “forwarded” to notes listed by chapter at the end of the text. In addition, some quotes are not credited (see p. 410, “to exaggerate”), some findings not credited (see p. 409, “House of Representatives' Committee on Oversight and Government Reform”), and some complete citations are missing (p. 200, n.25; p. 431, n.1). In the latter instance, the index is of no help in locating a possible full citation where the reference might have been mentioned earlier in the text or affiliated chapter notes. All of these issues raise potential problems for readers, who depend on detailed, consistent organization of cited research as a map or finding aid to the text.

Organizational issues aside, Edwards created what can only be thought of as an encyclopedic reference as to how humans understand global climate and weather through the models they construct.

References

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