

Orit Halpern, **Beautiful Data: A History of Vision and Reason since 1945**, Durham: Duke University Press, 2014, 342 pp., \$27.95 (paperback).

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Orit Halpern's ambitious book **Beautiful Data: A History of Vision and Reason since 1945** offers historical insight into why we naturally perceive data as valuable in our contemporary society. Unlike many studies on data, big data in particular (e.g., Mayer-Schönberger & Cukier, 2013), the main focus of this volume is not data per se. Rather, this book presents a genealogy of contemporary society where we are regularly obsessed with big data and visualization. With a particular focus on cybernetics, the author critically traces the trajectory of vision and reason after World War II and thus discusses the relationship between our historically trained attention and contemporary biopolitical rationality.



In the prologue (“Speculating on Sense”), Halpern describes the main objectives of the book. Echoing exemplary scholarship on the conceptualization of data from critical perspectives (e.g., Gitelman, 2013; Kitchin, 2014), she denaturalizes our contemporary embrace of ubiquitous or “beautiful” data from a historical perspective. In doing so, she presents the critical research questions for the volume:

How did space become sentient and smart? How did knowledge come to be about data analysis, perhaps even in real time, not discovery? How did data become “beautiful”? How did sustainability and environment come to replace structure, class, and politics in the discourses of urban planning, corporate marketing, and governmental policy? To summarize, how did perception, understood as a capacity to consume bandwidth, come to reorganize life itself? (p. 5)

In addressing these important historical questions, Halpern traces out “the historical relationship between cybernetics, vision, knowledge, and power, culminating in contemporary concerns with biopolitics” (p. 7) for the remainder of the volume.

In the introduction (“Dreams for Our Perceptual Present”), Halpern further develops the main themes of the book and discusses how the historical reformulation of vision and reason from the mid-twentieth century is related to biopolitical governance in contemporary society. In doing so, her work, Halpern divides the entire volume into four chapters. Each chapter focuses on one of four topics: “storage and archiving, the interface and the training of the observer, the transformation in attitudes to cognition and knowledge, and the assemblage of these components into a new structure for the attentive reorganization of territory and population” (p. 27).

In chapter 1 ("Archiving: Temporality, Storage, and Interactivity in Cybernetics"), the author commences with a definition of cybernetics that was developed by the mathematician Norbert Wiener and his colleagues at MIT and defines the term as "a science of control or prediction of future action" accordingly (p. 41). She goes on to say that cybernetic concepts will be a backdrop for the remainder of the volume. Rather than beginning with cybernetics as a point of departure in isolation from the historical context from which the study of communication and control emerged, Halpern elucidates what cybernetic concepts are (and are not) by differentiating them from the nineteenth century's modernist concerns. More specifically, she traces the trajectory of cybernetic concepts, such as predictability and feedback, in relation to the reformulation and reattachment of old concepts, such as archiving, representation, and temporality. In doing so, she maintains that cybernetic concepts ultimately witnessed the emergence of storage, visualization, and interactivity that inform our relationship to data in a contemporary society.

In chapter 2 ("Visualizing: Design, Communicative Objectivity, and the Interface"), Halpern traces out ways in which cybernetic concepts, embraced by the prominent designer and artist Gyorgy Kepes, the urban planner Kevin Lynch, and the designer Charles Eames, contributed to the reformation of "aesthetic practice, urban planning, and engineering, business, and design education" (p. 28). In doing so, she illuminates "the relationship between the emergence of a new form of observer, one both radically individuated and simultaneously networked, and a novel form of knowledge production based on assumptions of informational infinitude, a 'communicative objectivity'" (p. 84), which is an epistemological concept that is characterized as "new forms of observation, rationality, and economy based on the management and analysis of data" (p. 1). Tracing out the reformulation of our perception (vision, in particular) into interactivity with the emergence of the data-driven communicative objectivity, Halpern maintains that these designers and planners contributed to replacing "discourses of structure, class, and race" (p. 85) with the environment by linking human observers to visualization and management in a broader environment, thereby contributing to generating governmentality in our contemporary society.

In chapter 3 ("Rationalizing: Cognition, Time, and Logic in the Social and Behavioral Sciences"), the author discusses the historical transformations in attitudes to an epistemology of rationality with a particular focus on temporality. In particular, she focuses on investigating the role of various prominent human and social scientists, such as the neural net pioneer Warren McCulloch and the logician Walter Pitts, in reconceptualizing reason as a resource for a new methodology and assessment. In doing so, she maintains that the historical redefinition of rationality contributed to developing "new forms of measurement and methods in the social and behavioral sciences, encouraging a shift toward 'data-driven' research adjoined to a valorization of visualization as the benchmark of truth, and as a moral and democratic virtue" (p. 148). As to the issue of temporality, Halpern points out that the new cybernetic approach to measurement of rationality is primarily concerned with the future rather than the present by focusing on patterns of past data, with implications for our contemporary society. In doing so, she further maintains, "self-reflexivity through data analysis and visualization became a democratic virtue and obligation" (p. 190).

Chapter 4 ("Governing: Designing Information and Reconfiguring Population circa 1959") investigates "the historical and conceptual relationship between cybernetics, design, vision, and cognition" (p. 201) relative to governance and rationality. Halpern illuminates the link between politics and aesthetics

by examining cybernetic works by prominent scientists and designers and discusses how populations have been transformed “through the integration of emerging cybernetic models of perception and cognition into design” (p. 204). In doing so, she shows ways in which “bodies, territories, and networks are governed through measurement and attention” (p. 30), with the result being that new kinds of populations have emerged in contemporary biopolitics.

In *Beautiful Data: A History of Vision and Reason since 1945*, Halpern demonstrates an impressive ability to effectively address the important research questions with valuable implications for contemporary society. Furthermore, it is worth noting that she does not restrict the scope of her critical analysis to so-called Western society; in this volume, she commences with a description of Songdo, a South Korean city, as a case for her analysis. This is particularly significant when considering that many studies working on data tend to focus exclusively on particular areas.

Because the book is extremely densely written, *Beautiful Data: A History of Vision and Reason since 1945* may not necessarily be easy reading material. For those who find it difficult to work their way through Halpern’s detailed accounts, it is worth visiting the author’s website to find her own abstract (Halpern, n.d.). While an admirable volume, the book could have been further improved by avoiding repetition. This is perhaps one of the weak points in this volume; for example, the author writes a nearly identical paragraph twice (see p. 157 and pp. 158–159). In addition, the book could have been further improved by elucidating the rationales used to choose “figures and practitioners who focused on topics of visuality, storage, cognition, and design” (p. 27).

That said, Halpern’s brilliant and blow-by-blow exposition on the transformation of our sense and reason in *Beautiful Data: A History of Vision and Reason since 1945* certainly enriches our critical and historical understanding of important parts of contemporary society. This book contributes to the fields of communication studies, media studies, and science, technology and society (STS), as well as the history of science.

References

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