Orit Shaer

Here Is a Human Being: At the Dawn of Personal Genomics By Misha Angrist (2010) This book has affected me both personally and pro-

fessionally. In 2007 Misha Angrist, a genetics professor, became the fourth person to have his entire genome decoded and shared publicly, as part of Harvard's Personal Genome Project (PGP). This ambitious program seeks to improve the scientific understanding of genetics through the creation of a publicly accessible database of 100,000 volunteers' entire genomes and medical information. In this book, Angrist shares his personal story, why he joined the study, and what he learned through the experience. Today, more than 3,000 people have enrolled in Harvard's PGP. The book delves into a number of important questions: What do people want to know about their DNA? How comfortable are we with the knowledge of predisposition to cancer or to other medical conditions? What do we

do with this knowledge? And should our DNA sequence be publicly shared?

Personally, I contemplated these same questions with my partner, a discussion that led us to purchase direct-to-consumer genetic testing for ourselves. We learned much about our own genetics, as well as about the current limitations of genome interpretation and information presentation. Professionally, I was intrigued by how to communicate such sensitive, complex, and uncertain information to consumers in the most effective way. This led me to collaborate with Harvard's PGP and NYU to investigate the design of interactive tools that empower non-expert consumers to make sense of their personal genomic information.

Big Data: A Revolution That Will Transform How We Live, Work, and Think By Viktor Mayer-Schönberger and Kenneth Cukier (2013) Schönberger and Cukier describe how big data migrated from the sciences of

genomics and astronomy to practically all areas of human endeavor. This book positions big data as a revolution occurring around us, potentially changing economics, science, and culture, as well as the way we think. Using fascinating examples, Schönberger and Cukier define the big data revolution as the ability of society to harness information in novel ways to produce useful insights or goods of significant value. The book claims that big data is about predictions, the application of algorithms that process large quantities of data to infer correlations rather than causation. This book also raises questions regarding the "dark side" of big data, considering not only privacy but also propensity—big data predictions being used for policing and the use of data without understanding its limitations. I found this book thought provoking, prompting me to think about the role of our community in designing systems that facilitate transparency while striking the right balance between privacy and useful insights.

Creating Scientific Concepts: How Do Novel Scientific Concepts Arise? By Nancy J. Nersessian (2010) While the previous book sheds light on algorithms for generating insights from big data, this book focuses on the cognitive process of scientists as they create new scientific knowledge. Nersessian uses

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Focus: The application of tangible and embodied interaction to scientific discovery and collaborative learning

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cognitive science and historic examples to explain the process of model-based reasoning underlying

scientific discovery. She describes the activities involved in this process including creating analogies, deploying visual representations, and performing thought experiments. Working in the area of tangible and embodied interaction, I collaborate closely with scientists to develop interfaces that enhance scientific learning and discovery. This book informed many of our design decisions as we seek to develop interactions that facilitate the formation of new insights.

Positive Computing: Technology for Well-Being and Human Potential By Rafael A. Calvo and Dorian Peters (2014) This book was published recently and is a new addition to my bookshelf. It investigates the concept of “positive computing,” the

design and development of technology to support well-being and human potential. The authors take an interdisciplinary perspective to explore how technology can support specific well-being factors and advocates to develop and apply well-being measures to the design and evaluation of new technology. It is highly relevant to my research, inspiring me to think about new design considerations and measures for evaluations. Also, teaching computer science and media arts and sciences in a liberal

arts college, I plan to revisit this book, integrating the notion of positive computing into the curriculum to inspire students to “do good with technology.”

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By Jason Jerald, PhD

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