Book Review: Visual Insights: A Practical Guide to Making Sense of Data by Katy Börner and David E. Polley

This book, developed for use in an information visualisation MOOC, covers data analysis algorithms that enable extraction of patterns and trends in data, with chapters devoted to "when" (temporal data), "where" (geospatial data), "what" (topical data), and "with whom" (networks and trees); and to systems that drive research and development. ***Jamie Cross*** *finds that the book's hands-on sections demand time and effort, and more reflection on how we exist in and relate to the world would have been welcome.*

Visual Insights: A Practical Guide to Making Sense of Data. Katy Börner and David E. Polley. MIT Press. 2014.

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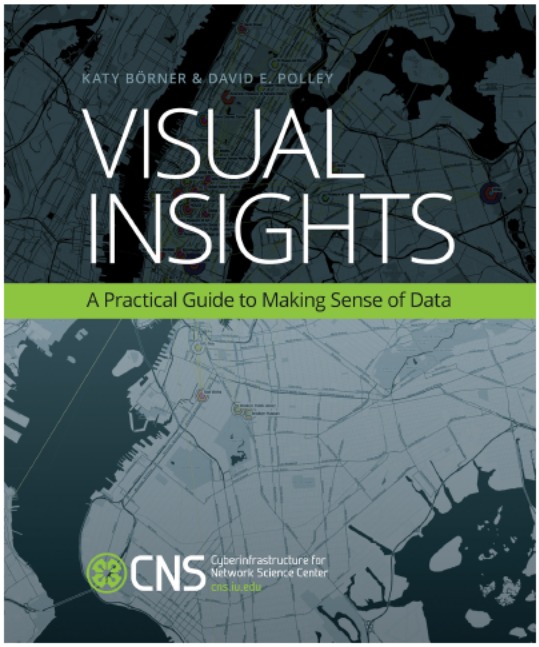

On the north west coast of Scotland is the Knoydart peninsular, home to what might be mainland Britain's most remote, community-run, renewable energy project. Knoydart is not connected to the UK's mainland road infrastructure, to mobile phone networks or to the mains electricity grid. Eighty homes and small businesses here are supplied with power generated by a small, 180kw, hydroelectric system. A pipeline carries water from Loch Bhraomisaig on the slopes of Beinn Buidhe, down a steep hillside to a noisy turbine shed where it is converted into electricity. Attached to the inside wall of the shed is a small purple box the size of a hardback book. This is the DataTaker, a piece of Australian branded technology that collects live readings on the dam level, power generation, and electricity consumption every second of the day. This summer a team of social anthropologists and designers from the University of Edinburgh have been working with Knoydart Renewables, which manages the hydro, and Community Energy Scotland to visualise data on electricity consumption. Our aim has been to better engage Knoydart's residents and the tourists who come here to experience 'life off the grid' with the challenges and promise of renewable energy.

Even in places that appear to be 'off the grid', like Knoydart, the lives and life worlds of people living in contemporary Britain are saturated with data. As diverse groups of people work to analyse and communicate data there is a growing demand for techniques and tools that can help us to visualise it. This book, *Visual Insights: A Practical Guide to Making Sense of Data*, promises a gentle introduction to the design of meaningful data visualisations, providing conceptual and practical lessons. Each main chapter walks the reader through a different kind of dataset – temporal and geospatial, textural, linguistic or semantic data, and network data – with essays that present different ways of making sense of this data visually, in maps, graphs or tables. These chapters are replete with examples and full-page, colour images showcase classic visualisations. Each chapter is followed with a hands-on-lesson using a piece of free open-source software, *Sci2*, aimed at helping the novice make their own.

The book was written for use in a Massive Online Open Course (MOOC) on Information Visualisation run by the University of Indiana, where authors Katy Borner and David E. Polley are based. For anybody taking the online course *Visual Insights* offers a comprehensive textbook. Each of the essays and the book's illustrations leave the reader convinced of the power of the data visualisation as a mode of representation, an analytical device, and as an art form. But anybody picking up the book, as I did, with the intention of teaching themselves how to generate novel visualisations from new data sets will find themselves challenged. The book's hands-on sections demand time and effort, reminding us that datasets are material things and that harvesting, manipulating or visualising them is labour intensive. The tutorials are perhaps best followed in conjuncture with the MOOC or another, similar entry-level data course. Without it even those people confident in their own computing skills and ability to handle new software will struggle to work with the Sci2 platform.

As I discovered this summer, trying to transform rows of numbers in a table or a file of comma separated values into graphic visualisations that look like those in this book requires creative energy and perseverance. For the purposes of this review, for example, I tried to produce a network graphic illustrating the relationships between reviewers, topics and institutions writing for the LSE Review of Books since its launch. After several failed attempts I gave up. The software itself suffers from some design flaws. Compared with a new generation of online tools for harvesting and visualising data, the interface is cumbersome and un-intuitive. More advanced users will also find the visual options limited and those looking to generate sophisticated data visuals like the colour maps and data info-graphics that this book showcases may want to look for alternatives.

Researchers and analysts, of course, are not the only people working to make sense of data. As we have worked to make live data sets on energy consumption in Knoydart available to diverse public audiences of residents and tourists, for example, we have discovered that visual info-graphics are not always the most affective media. No matter how high their production values some people remain alienated or intimidated by data graphics, charts and maps. Instead we have had more success experimenting with virtual or physical objects, like a digital kettle that displays live data on energy demand or a wireless light bulb that has been hacked so that its colour changes in relation to community energy consumption. These things allow people to 'make sense' of data in playful and interactive ways that often prove more provocative, engaging with peoples' existing practices and habits, the ways they inhabit space, experience time, and manage their relationships to complex technological systems or the institutions around them.

Making sense of data is not just a question about how we know

(epistemology) but also a question about how we exist in and relate to the world (ontology). Few of these challenges and questions are raised by this book, which assumes the primacy and power of the visual. Yet the insights gained from data visualisation do not always travel. One lesson from the University of Edinburgh's work with communities living off the grid is that making sense of data means thinking about how it can be materialised as well as visualised.

Jamie Cross is a Lecturer in Anthropology and Development at the University of Edinburgh. His current research examines the social and material politics of low carbon energy technologies in contexts of global poverty. A book about the hopes and dreams attached to projects of industrialization in India is due to be published by Pluto Press in early 2014. He tweets at @jamiejcross. Read more reviews by Jamie.

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