The Weekly Qualitative Report Volume 1 Number 10 December 8 2008 62-66
http://www.nova.edu/ssss/QR/WQR/daston.pdf

A Review of Lorraine Daston and Peter Galison's *Objectivity*

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Lorraine Daston's and Peter Galison's Objectivity (2007) traces historical and cultural developments as the word "objective" acquired different meanings and associated scientific practices. Similarly, Daston and Galison consider the changing relationship of the word "objective" as it relates to the subjectivity of the researcher. Objectivity will interest any reader interested in how the conceptions and practices of science change historically and culturally. Key Words: Science, History, Objectivity, and Qualitative Research.

> A claim to objective knowledge is an absolute demand for obedience.
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> Mendez, Coddou, & Maturana, 1988, p. 170

> The answer to the question "Why objectivity" lies precisely in the history of the scientific self to be eliminated.
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> Daston & Galison, 2007, p. 197

Most qualitative researchers have at some point run up against the argument that their research and science is not objective. The word objective implies a kind of rigor or neutral omniscience that philosopher, Thomas Nagel (1989), aptly described as the "view from nowhere." Most people are willing to grant "objectivity" the status of an ideal, one that methodologically rigorous, subjectively untainted, and expertly peer-reviewed, research can hope to reflect and approximate. Deemed "objective," such knowledge is used to underwrite policy directives, act as the source of scientifically warranted practice, and end controversies in social or other arenas where such controversies need to "be put to rest." Examined historically, objectivity has been a shifting human ideal, an ideal that scientists have flirted with, fetishized, and modified to fit the cultural virtues of the day.

Lorraine Daston and Peter Galison have well-established track records as scientists and historians of science at two of the world's most renowned centres of scientific knowledge: Germany's Max Planck Institute and Harvard University. I first encountered Peter Galison's wonderful 2004 book, *Einstein's Clocks and Poincaré's Maps: Empires of Time,* a few years ago where he highlighted the convergence of ambitions and insights of scientists like Einstein and Poincaré, and the politics that went into developing the world's 24 hour clock and its related time zones. There, science and its outcomes took on a very human face. But, it is precisely this humanness, and its presumed downsides for science that motivated Daston and Galison (2007) to write *Objectivity*.

Objectivity's "evil twin" so to speak is subjectivity. For scientists, this realization has prompted some historical variations metaphorically equivalent to trying to lose one's shadow, and it is these variations that *Objectivity* recounts. While its use as a word had

been around since the era of the early Greeks, objectivity gained its status as a scientific word, Daston and Galison (2007) argue, in the mid 19th century. The classic story of modern, enlightenment era science owes its origins to principled people wresting control of knowledge, creation and dissemination away from corrupt religious officials who prompted events like Martin Luther's posting of his 95 theses (Toulmin, 1990). Thus, scientists moved to new ways of ensuring the truth of their discoveries and experiments, adopting methods that could be replicated and scrutinized by respected peers. Objectivity, for Daston and Galison, found traction as a word when scientists began to more seriously reflect on what they saw as an increasing obstacle to scientific knowledge: themselves. The irony this book points out is that objectivity itself has had to take on different human morals, meanings and practices – to fit different expectations for objectivity.

Borrowing Foucault's (1988) critical historical perspective, Daston and Galison (2007) relate "objectivity" to the "epistemic virtues" associated with particular eras. In their words, epistemic virtues are "norms that are internalized and enforced by appeal to ethical values, as well as to pragmatic efficacy in securing knowledge" (p. 40). And it isn't just the values that change, the scientist practicing them changes as well, as different conceptions of what it means to be objective are taken up, or held out expectedly of scientists. The ascetic nerds of mid-20th century objective science were quite different from mid-19th "truth-to-nature." artistically scientific, practitioners. While many may be quite prepared to accept that aesthetic tastes, technology, and ways of communicating might vary with time, the notion that the seeming linchpin of science, objectivity, might similarly change with the times can be unsettling. The authors are not talking here about the classic evolving scientific narrative where things converge on ultimate truths and correct practices. No; as other similarly ambitious historical projects, such as Charles Taylor's (1989) review of the self, Foucault's examination of madness, or Norbert Elias' (2000) account of civility show – the human virtues of one's day can be somewhat fickle. Daston and Galison trace objectivity through different identifiable phases, with very different conceptions for being an objective scientist.

The first era, one that preceded modern attempts at objectivity, relates to the scientific effort to capture nature "as it was" through artistic re-presentation. The trouble here, however, is that to come up with such a re-presentation one had to standardize or idealize nature's variability into a typical, but "pure", snowflake, for example. This kind of re-presentation was done for one of the most important scientific endeavours of that era: classifying and representing biological, geological and other phenomena. The notion of capturing these phenomena – in their "purity" – was a scientific obsession, meant to help the re-presenter get closer to nature's beauty and secrets, to make them recognizable and classifiable. Thus, many key science books of this era featured spectacularly detailed drawings of these "pure" phenomena, and *Objectivity* itself features many such drawings.

With the advent of daguerreotypes and cameras, the view that nature could be differently represented – without the taint of human idealism and standardization – ushered in what Daston and Galison (2007) described as the first modern era of objectivity: mechanical objectivity. Here is what they have to say about it:

> By mechanical objectivity we mean the insistent drive to repress the willful intervention of the artist-author, and to put in its stead a set of procedures that would, as it were move nature to the page through a strict

> protocol, if not automatically. This sometimes meant using an actual machine… (p. 121)

Qualitative researchers may find themselves having a little déjà vu in reading this definition, as might those enamoured with qualitative data analysis software. The key to this "epistemic virtue", however, is the explicit attempt to take out the human element from the research, to make the research processes and products objective, or in the words of our authors: "the machine stood for authenticity" (p. 129). In making this particular move toward objectivity, a new kind of policing, a la Foucault (1988), takes hold as peer review, scientific "self-scrutiny," and scientific expectations generally, are tasked with ferreting out any traces of subjectivity, and to hold such transgressions up for scientific scorn and dismissal. Pages of pictures of machinery, and of the products of machinery are placed in alongside this account of the era of mechanical objectivity, and of the scientific loyalties expected.

However, something about mechanical objectivity fell short of developments both within science and beyond; it "was costly – in different contexts it demanded sacrifices in pedagogical efficacity, color, depth of field, and even diagnostic utility" (Daston & Galison, 2007, p. 179). Mechanically trying to reproduce the world, to show objectivity and scientific self-restraint, left some things out that scientists and society at large wanted – of the self as well. In tracing these shifting expectations of the scientist, they write,

> …genius migrates from well-stocked memory to steely will, as the self is reconceptualized first as a congeries of faculties, then as a will-centered monolith. Moral imperatives shift accordingly, to combat first the temptations of the imagination and then subjectivity. Quests for truth and quests for objectivity do not produce the same kind of science or the same kind of scientist. (p. 232)

What was needed, as these deficiencies in mechanical objectivity were becoming evident, was a science that could better attend to how things purportedly were, as nature's structures. With structural objectivity came a focus on measurement, logic, replicable, empirical sequences reliant on the pristine senses and dispassionate reasoning of the scientist. For those familiar with Husserl's phenomenological project, it was an attempt to "get to the things themselves," to experience reality first hand; or in our authors' words: "Nature, like Luther's Bible, should require no interpreter" (Daston & Galison, p. 260). For post-structuralist readers of this review, this will read as a naïve ontology in which nature speaks to the scientist if she or he will only properly listen. But, listening properly came with added abstractions: numbers, a priori names, formulae, observational, measuring instruments, and so on. Missing from the structuralists' account of their scientific practice was an acknowledgment like this, from Gregory Bateson, "When the investigator starts to probe the unknown areas of the universe, the back end of the probe is always driven into his own vital parts" (as cited in Keeney, 1983, p. 129).

Structures owe something to the schemes of intelligibility that people use to identify them as such. In my profession of family therapy, this would be how my training might help me see a problematic pattern of family interaction where my psychology colleagues would see examples of individually diagnosable psychopathology. The idea

here was that the discernment of such structures owed something to the closer-to-reality objective empiricism of the scientists who could flatten their affects, crank up their senses, and report "what was there." It was the ability to recognize "what was there" that came to be a problem – a problem of training (remember: humans were originally supposed to get structural reality because of their raw powers of observation). Thus, to become objective required being steeped in particular ways of training one's objectivity to see the structures a science requires. By this logic, a cellular biologist, a geneticist, an anthropologist, and a psychologist can each look at a human being and come up with different structural accounts of the same person – all objectively one should add.

At the heart of this book that traces such developments in scientific objectivity is an account of science's varying objections to subjectivity. As Daston and Galison (2007) contend, "Objectivity and subjectivity are expressions of a particular historical predicament, not merely a rephrasing of some eternal complementarity between a mind and the world" (p. 379). This is a very hermeneutic view of both science and the concept of objectivity, not unlike Richard Bernstein's (1983) consideration of the subject 25 years ago, though the focus here is more explicitly on the history of science.

For the average qualitative researcher, this book offers some "dirt" on a sometimes opponent: quantitative science that uses largely structural (ergo: "objective") research premises, methods and outcomes. You are not likely to win any converts in arguments with structuralist colleagues, but, seeing science's broader history you may develop sympathies for the dilemmas qualitative researchers have met square on in gaining legitimacy for their very human, and still quite accountable, approaches to science.

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Article Citation

Strong, T. (2008). A review of Lorraine Daston and Peter Galison's *Objectivty*. *The Weekly Qualitative Report*, 1(10), 62-66. Retrieved from http://www.nova.edu/ssss/QR/WQR/daston.pdf