

Taking Things Apart: A Scientific and Artistic Exploration

Reading Assignment for Week 1

Daston and Galison, *Objectivity*. Prologue, Chapter I, and Chapter II
Steinhart, *The Undressed Art: Why We Draw*. Chapters 1-3
Freeman, *Biological Science*. Chapter 1

Seminar Assignment for Week 1

Bring two copies of your written answers to the starred (*) questions for Seminar on Wednesday September 28. (The other questions will be discussed in Seminar.)

Prologue. Objectivity Shock

1*) How is Worthington used by the authors to exemplify the move away from idealizing objects of scientific study, as possessing the properties of symmetry and regularity, to treating them "objectively", with the qualities of asymmetry and irregularity? Why did the authors open with this tale?

Chapter I. Epistemologies of the Eye

2*) What is epistemology? What is an epistemic virtue?

3*) How is scientific objectivity distinguished from truth and certainty by the authors?

4) What is a scientific atlas? How are the images in these atlases used as evidence in this book?

Daston and Galison claim that the concept of scientific objectivity is relatively recent in the history of human inquiry, emerging only in the mid-nineteenth century.

5) How have the meanings associated with the word pair *objectivity/subjectivity* changed over time?

6) How is the history of objectivity tied to the nature of the subjective self for the scientist as compared with the artist?

7*) In this chapter, Daston and Galison kindly summarize the argument that they construct in this book: the image in an atlas is the product of a distinct code of epistemic virtues of a particular historical era. Describe the salient features of each virtue:

- a) truth-to-nature
- b) mechanical objectivity
- c) trained judgement

8) In the final pages of the chapter, the authors raise two important points that are worth further discussion.

a) What is objectivity? Comment on the following passage:

To paraphrase Aristotle on ethics, one becomes objective by performing objective acts. Instead of a pre-existing ideal being applied to the workaday world, it is the other way around: the ideal and ethos are gradually built up and bodied out by thousands of concrete actions, as a mosaic takes shape from thousands of tiny fragments of colored glass. (p. 52)

b) Does the practice of objectivity involve moral decisions? Comment on the following passage:

The values of objectivity are admittedly specific and strange . . . These are values in the service of the True, not just the Good. But they are genuine values, rooted in a carefully cultivated self that is also the product of history. . . Viewed in this light, whether objectivity is a good or bad thing from a moral standpoint is no longer a question about alleged neutrality toward all values, but one about allegiance to a hard-won set of coupled values and practices that constitute a way of scientific life. (p. 53)

Chapter II. Truth-to-Nature

9*) How did Linnaeus's ways of looking at, describing, depicting, and classifying plants practice the epistemic virtue of truth-to-nature?

10) How are the following terms related to the idea of an underlying archetype (*Typus*): *typical, ideal, characteristic, average*. How does *beauty* enter into consideration?

11) What is implied about the relationship between the naturalist and the artist in the subtitle "Four-Eyed Sight"?

12*) What is a holotype? How did the notion of the holotype change the practice of taxonomy away from the Linnaean embrace of truth-to-nature?

13) The following passage articulates an important point that speaks directly to this program. Provide a commentary:

The nature they sought to portray was not always visible to the eye, and almost never to be discovered in the individual specimen. In their opinion, only lax naturalists permitted their artists to draw exactly what they saw. Seeing was an act as much of integrative memory and discernment as of immediate perception; an image was as much an emblem of a whole class of objects as a portrait of any one of them. Seeing--and, above all, drawing--was simultaneously an act of aesthetic appreciation, selection, and accentuation. These images were made to serve the ideal of truth--and often beauty along with truth--not that of objectivity, which did not yet exist. (p. 104)