Solomon “Social Empiricism”

1) What explains the occurrence of consensus in scientific communities? (Historical)

2) When is consensus normatively appropriate? (Philosophical)

1. Explaining Consensus:

According to Solomon, philosophers of science tend to recognize the role of social factors in determining which projects scientists *pursue,* but not in determining which theories scientists *accept.*

Thus, philosophers like Giere, Hull, and Kitcher claim that social may be responsible for dissent, but epistemic factors are responsible for consensus.

**DQ:** Do scientists distinguish between pursuit vs acceptance of theories? Can we differentiate between the factors that lead them to purse vs accept a given theory?

Hypothesis 1 (Giere, Hull, Kitcher): Consensus is formed by individual scientist’s unbiased evaluation of the relative empirical success of competing theories

If H1 is true, then we should expect that *most* scientists accept a theory at roughly the same time. (333)

Hypothesis 2: Consensus is formed by individual scientist’s unbiased evaluation of the empirical success of competing theories *relative to their methodological standards* (Laudan & Laudan)

If H2 is true, then we should expect that most scientists accept a theory at roughly the same time within a discipline (334)

Hypothesis 3 (Solomon): Consensus is formed by cognitive, motivational, and sociological factors

If H3 is true, then we should expect…?

Historical Evidence:

1. Geologists tended to become convinced of drift as evidence developed in their own specialty
   1. “The order of consensus formation was paleomagnetists, oceanographers, seismologists, stratigraphers, and then continental geologists concerned with paleontology and orogeny” (333)
2. Geologists gave their own findings special weight in their deliberations
   1. Wilson and Ewing’s own initial experiments “bias[ed] their evaluation of further developments in the field” (333)
   2. “[I[t is doubtful that the oceanographers at Lamont (headed by Ewing, who had been dismissive of Vine and Matthews' work) would have been converted to drift so rapidly had the results not been produced in their own laboratory” (333)
3. Prior attitudes influenced reception of the data (confirmation bias)
   1. “Opdyke and Vine immediately saw in Pitman's data a confirmation of drift; Heirtzler and Worzel thought that the same data was too good to be true; Ewing thought that the data represented mantle electrical currents (333)
4. Peers and people in power influenced the decisions of individuals
   1. “Pitman was very uncertain about his interpretation of the data in terms of seafloor spreading until a more senior scientist, Opdyke, and a peer, Dickson supported it” (333)
   2. “Peer pressure and the desire for peer recognition encouraged geologists to adopt drift and participate in the revolution” (334)
5. Geologists converted to drift by being included in social networks/conferences
   1. McKenzie was influenced to develop plate tectonics at the 1966 Goddard conference
   2. “Geologists were not, in general, convinced by reading the data in journals on their own”

**DQ:** Does Solomon provide sufficient evidence to support each of these historical claims?

**DQ:** Solomon claims that some of these five features of consensus development for plate tectonics are inconsistent with H1 and H2. Are they?

Normatively Appropriate Consensus:

Solomon claims that norms for scientific consensus should:

1. Include the features that really do feature in consensus formation (i.e. include sociological and non-epistemic factors)
2. Recognize that consensus is at least sometimes normatively appropriate (against social relativism)

Solomon claims that “Not even one individual scientist need make unbiased judgments of empirical success for a consensus to be normative” (337).

On Solomon’s account, empirical success is both necessary and sufficient for normatively appropriate consensus.

**DQ:** Who can evaluate whether consensus is normatively appropriate on Solomon’s account and when?

Gems/Lumps of Coal:

* I’m not convinced that Solomon has provided the right kind of evidence to justify the claim that social, rather than epistemic factors are what cause scientists to accept a theory in cases of consensus
* Nonetheless, I think it’s point in favor of her account of normatively appropriate consensus that it does not require scientists to accept a theory solely on the basis of epistemic considerations.

Integrated HPS:

Solomon integrates history and philosophy by using a case study to support her account of consensus formation (a historical claim) and then using this as the basis for an account of normatively appropriate consensus (a philosophical claim).