A Science of Bias and Habit: Investigating Science and Masculine Bias through the Works of Longino-Doell and Hume

Introduction

Scientific inquiry, despite striving for an objective understanding of the world, has faced numerous difficulties both within and outside of the discipline. Many thinkers in feminist circles have argued that science is susceptible to political, social, and economic forces and also suffers from strong masculine biases. Thinkers such as Longino-Doell argue that masculine bias emerges in the way science is conducted as well as in the construction of scientific theories. Another thinker who challenges objective/rational thinking is David Hume. To Hume, only memory and senses can be seen as rational operations, and beyond that we deploy customs, or habits, when we want to make sense of the world. My argument is that Hume's work in *Enquiry Concerning Human Understanding* can be used to strengthen and better inform the ideas surrounding bias presented Longino-Doell's *Body, Bias, and Behavior*.

To this end, I will provide an exegetical account of Longino-Doell's and Hume's work. I will then attempt to synthesize the thoughts of both thinkers, explain their usefulness in depicting limitations of science, and demonstrate advantages can be seen by framing Hume's thought in Longino-Doell's work. Challenges to this synthesis will be discussed. Some may argue that the ideas of these thinkers are not only disparate, but incommensurable. I will explain why the steps in this paper are justified.

Longino-Doell- Masculine Bias

In *Body, Bias, and Behavior*, Longino-Doell intend on demonstrating how masculine biases have contaminated the way in which science is understood and conducted. They argue that biases have effects on facts, evidence, hypotheses, and theories. To Longino-Doell, those who conduct science are influenced by the social/political environments that precede them. Furthermore, the facts that are and can be known by scientists are "a function of our perceptual and intellectual structures," which, again, are conditioned by our environment [75]. In light of this, Longino-Doell suggest that sexist social/political environments not only shape those who conduct science but also affect the availability and interpretation of facts. Longino-Doell also propose that evidence is merely a collection of facts used to support, beliefs, hypotheses, and theories. The origin of scientific questions and theories is even susceptible to biases, as Longino-Doell state: "[Which theories are under consideration] in turn is determined by the explanatory needs of the scientific community, which are a function of specific, social, institutional, and political goals" [76].

Longino-Doell provide a compelling argument as to why scientific work does not happen in a vacuum, but in order to better understand how these masculine bias affects the way science is understood and conducted, it is necessary to see how these biases operate. In other words, Longino-Doell propose an argument *that* masculine biases exist in science, but it still needs to be known *how* masculine biases exist in science. Here, David Hume's work will come into play.

Hume- Perceptions of the Mind

In *Enquiry Concerning Human Understanding*, Hume makes a distinction between two different "perceptions of the mind." The first of these is *impression*, which he defines as, "lively perceptions, [such as] when we see, or hear, or feel, or love, or hate, or will" [10]. The second is

idea, which involves reflection, remembrance, or anticipation of impressions. To Hume, impressions are not only more vivid than ideas, but impressions are the building blocks from which ideas are made. For example, the idea heat cannot be understood without first experiencing heat itself.

Hume makes another bifurcation, this time dividing the objects of human thought into two categories: *matters of fact* and *relations of ideas* [15]. Relations of ideas do not exist physically (like geometry). Matters of fact are concerned with the existent world and involve information from one's memory and senses. However, matters of fact are not verifiable, because there is no way to know whether a counter-example of a matter of fact exists. One implication of this is that belief in phenomena like causality is irrational. Matters of fact such as causality are things individuals impose on the world to make sense of it. This imposing of something like causality onto the world is an example of what Hume calls custom, or habit. Habit, though not truly rational, is instrumental for human operation in the world. Accordingly, inferences from experience come from habit and not reason [28].

Synthesis

Now that Longino-Doell's and Hume's views have been charted, I will attempt to synthesize the two to create a more comprehensive account of masculine bias in science. It seems that general biases could be accounted for by Hume's idea of habit, namely because biases are irrational but help orient individuals as they navigate the world, regardless of their level of justification. In his own words, "[Habit] renders our experience useful to us, and makes us expect, for the future, a similar train of events with those which have appeared in the past" [30]. Hume's concept of impressions can also account for biases. According to Hume, impressions can

be sensational (seeing, hearing, feeling), but also be more complex (love, hate, will). Biases could be placed within the category of complex impressions.

With bias now located in the Humean framework, we can discuss masculine bias in science specifically. Through impressions, Hume explains how individuals make sense of the world via experiences. Longino-Doell argue that "...in giving coherence to our experience we necessarily select certain facts and ignore others. The choice of facts to be explained by scientific means is a function of the reality constructed by this process of selection" [75]. If the facts explained and/or investigated by science are contingent on the reality shaped by socio-political forces, and one of these prominent forces is sexism, then it makes sense to assume that masculine bias has indeed infiltrated scientific work.

Challenges

With Longino-Doell's and Hume's synthesized, some challenges will be presented to this move. One may argue that Hume's impressions don't line up with Longino-Doell's notion of fact. To Hume, an impression has a vivacity that can't be denied, but a fact as seen by Longino-Doell may have contingencies regarding how it is described [75]. It is unclear whether Longino-Doell think of facts as having the same solidity as a Humean impression. Furthermore, Longino-Doell argue that the way in which facts are made salient to individuals is contingent on pre-existing conditions. The only possibility of having a variant impression in Hume's framework is through deficiencies in sensory organs [12].

Resolution

To address concerns impressions and facts not meshing well, we will revisit the idea. Hume is critical of the validity of making judgements about the future, which is why he proposes

the idea of habit. If it were the case that impressions have implicit temporal assumptions such as, "X is happening (and will continue to happen)," then Hume may still be aligned with Longino-Doell. But if we were to agree with this idea of a temporal shift, it seems that we may actually be concerned with matters of fact, and not impressions at all. In light of this, matters of fact seem to map onto Longino-Doell's idea of fact better than impressions do. Matters of fact, as opposed to impressions, have a fluidity and contingency in their truth value since the contrary of any matter of fact is technically possible [15]. In Hume's words, "All reasonings concerning matter of fact seem to be founded on the relation of *Cause and Effect*. By means of that relation alone we can go beyond the evidence of our memory and senses" [16]. This must be where bias originates- through an exaggerated or incorrect establishing of a causal relationship generated by an individual.

This new synthesis will now be contextualized in our area of interest: masculine bias in science. In relying on cause and effect (this act being called habit), individuals create/organize information (matters of fact) beyond immediate memories and senses for instrumental purposes. The task of establishing matters of fact, however, is susceptible to errors of the individual. These errors can explain both the origin of masculine bias as well as how masculine bias can taint science (since science itself is discovering and inquiring about matters of fact).

Conclusion

To recapitulate, I first introduced and explained Longino-Doell's idea of masculine bias in science, and then did the same for Hume's perceptions of the mind. With the concepts of each thinker, I explained how masculine bias could be possible in a Humean framework, specifically by synthesizing Hume's idea of impressions and Longino-Doell's notion of fact. After this, I

brought up concerns about how well concepts fit together, and as a result, I found that Hume's *matters of fact* combined with Longino-Doell's understanding of fact made for a stronger argument. Longino-Doell provided insight into masculine bias in science, and a reading of Hume allowed us to gain a better understanding of how this phenomenon occurs. By highlighting the limitations of how individuals understand the world around them, it has become more clear how and why masculine bias in science exists.

References

1. David Hume. *An Enquiry Concerning Human Understanding*. 9-32.
2. Helen Longino & Ruth Doell. "Body, Bias, and Behavior: A Comparative Analysis of Reasoning in Two Areas of Biological Science." 73-90.