

Q6 “Avoiding bias seems a commendable goal, but this fails to recognize the positive role that bias can play in the pursuit of knowledge.” Discuss this statement with reference to two areas of knowledge.

In the context of this essay, bias is defined as a “systematic deviation from the truth” (Cochrane, 2021). It is *systematic* as the deviation is not random-- it is consistently geared towards a particular direction. Moreover, there must exist some standard in which we measure bias as a deviation from. This depends on what we define as the “truth” within a particular AoK. In the case of natural science, “truth” refers to the objectively existing, material world, whereas in history, it refers to the objectively existing past. It is important to note that the focus of this essay is on *shared knowledge* as opposed to *personal knowledge*-- cognitive biases and naive theories, such as limitations in an individual’s understanding of a subject belong to the domain of *personal knowledge* (Susan, 2006), and thus will not be discussed in my essay. By exploring the Areas of Knowledge (AoK) of natural science and history, this essay aims to demonstrate that the notion of bias is inapplicable in *shared knowledge*, that bias should only be avoided when converting from *personal knowledge* to *shared knowledge*. Thus, the commendable goal - the common aim of an academic community - fails to recognize the positive role bias plays in the pursuit of knowledge.

Interpreting the title formulates my Knowledge Question: **To what extent does bias play a positive role in the progression towards truth within a particular AoK?**

Natural science is the study of the objectively existing, material world-- the aim of natural science is to develop theories that allow us to approximate reality. Therefore, it is compelling to conclude that a theory is biased when it deviates from reality. However, we can only know whether a theory corresponds to reality through experiments, but it is possible that such experiments themselves are flawed in the first place. Science can not guarantee absolute correspondence to reality, but scientific methodology, such as falsification guarantees that

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every effort has been made to ensure that a belief is true and corresponds to reality beyond reasonable doubt, that bias has been checked and controlled.

For instance, in 1862, the physicist William Thomson published a series of calculations that estimated the age of Earth to be between 20 million and 400 million years (John & Thomas, 2020). Assuming that Earth had formed as a completely molten object, he determined the time it would take for the surface of the Earth to cool to its present temperature. Adhering to the spirit of falsification, further experimental calculations have served to increase our confidence in Thomson’s estimation. As we now know that the Earth is estimated to be 4.54 billion years old, Thomson’s calculations failed to account for heat produced by radioactive decay, a process that was unknown back then. Thomson’s theory is biased from the lens of a modern-day scientist. It is an example of bias in *shared knowledge*-- in this case a fallacy in our prior understanding of radioactive decay. That does not mean that Thomson’s theory was invalid-- he guaranteed that his theory corresponded to reality beyond reasonable doubt through the scientific methodology. Scientific theories, through the process of falsification, are getting less biased and better approximate the objective reality. With this logic, bias makes things “unscientific” as it encourages deviation from the scientific methodology and goes against the objective of science-- correspondence to reality beyond a reasonable doubt.

Although avoiding bias seems like a commendable goal in natural sciences, it is not practical to completely avoid bias as observational facts are inevitably theory-laden. That is, whether a theory is biased or not is dependent on “observational facts”, but observations themselves are theory-laden. This is perfectly illustrated through Paul Feyerabend’s *tower argument*: The fact that a stone dropped from a tall tower falls vertically is evidence that the earth is

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stationary. That is because if the Earth was moving, then it would have moved as the stone was falling, hence the stone would have fallen diagonally instead (Feyerabend, 1993). Scholars in the 16th Century were justified in rejecting the ideas of a moving Earth as in their perspective, this was inconsistent with observational evidence. We now understand that this is due to the idea of inertial motion: the stone, while falling, was moving horizontally together with the Earth. The development of Newtonian mechanics has allowed us to reinterpret how objects fall-- in this case, the “observational fact” changed as we are now viewing it from the lens of a different theory. With the change of how we interpret our surroundings, the theory that the Earth is moving is now consistent with observational evidence.

The *tower argument* illustrates how all observational facts in natural science are inevitably theory-laden-- a product of interpretation through the lens of some theoretical framework. This introduces the problem with falsification: a theory should be refuted if it does not correspond with “observational facts”, yet observations themselves are dependent on theories. Earlier, we have established that natural science aims to develop theories that approximate the objective reality. But if there is no such thing as an “objective reality” since observation is a product of interpretation, what are we approximating our theories to? What are we measuring bias as a deviation from? Thomas Kuhn provides a solution to this problem. He argues that like evolution, scientific theories are driven by “Survival of the Fittest”: Every theory attempts to solve a number of problems and every new theory is a better solution than the previous one (Kuhn, 2012). When we reject the idea of an “objective reality” and instead treat theories as solutions to problems of the scientific community, the concept of bias becomes inapplicable altogether. Provided that a theory has stood the test of scientific

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methodology (and is thus classified as *shared knowledge*), that bias has been checked and controlled, it becomes impossible to determine bias in shared knowledge.

Similar to natural sciences, History as an AoK aims to approximate the objectively existing past-- to understand why certain historical events happened, and the significance of that. History simultaneously deals with subjective and objective knowledge, thus any “fact” in history is already a product of interpretation. Using the same logic as above, we must also reject the idea of an objectively existing past, that there is no “truth” to measure bias as a deviation from. A better way to understand this argument would be to replace the word “bias” with “perspectives”. This is because as perspectives are all we ever have-- the word “bias” can not be applied to them.

The Knowledge Question can thus be rephrased as: **To what extent do perspectives play a positive role in our pursuit of knowledge in history?**

Although the notion of bias does not exist in history, that does not mean we should accept all perspectives equally. Perspectives are a product of interpretation, but only to an extent-- you can't possibly have a theory that denies the fall of the Berlin Wall. Some perspectives are “better” than others-- they are more accurate, comprehensive, and are more helpful in our pursuit of knowledge, thus we should select the best of currently available rival perspectives. However this poses a problem: it is impossible to compare between rival perspectives against multiple criteria. For example, orthodox historians argue that the Soviet Union is responsible for the start of the Cold War. While this perspective is accurate and consistent with information available at the time, it lacks the comprehensiveness and openness of the

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revisionist interpretation, which argues that hostilities developed as a result of mutual suspicion and reaction (Morris, 2018). This example effectively illustrates the complexity in selecting among rivalling interpretations-- it is impractical as selection criteria are often multidimensional.

Rather than selecting a certain perspective, heteroglossia, the fundamental idea behind history (coined by Mikhail Bakhtin, 1975) argues that we should allow multiple perspectives, including contrasting ones to co-exist, as we can only understand history as a combined product holistically through encouraging multiperspectivity. This is illustrated through the dispute over the success of the US containment policy, implemented during the Cold War to prevent the spread of communism abroad. An orthodox historian would argue that the policy was successful, referencing Korea and Iran as examples of maintaining a capitalist regime, whereas a revisionist would argue that it is a failure given the loss of China and Vietnam. The co-existence of multiple perspectives encourages discussion and progression in history through creating different schools of thought. With this dispute, a new perspective was formed: Post-revisionist, arguing that it was neither a success nor failure, but simply a defensive policy employed in response to the Soviet Union's increasing international influence (Carpol, 1987). This new perspective provides us with a holistic understanding of the containment policy-- an understanding of why the policy exists and the significance of it. It is only through encouraging dialogue and multiplying perspectives that we can better understand the reasons as to why an event happened, and the significance of the event.

In response to the title, in natural sciences, we should accept that as long as a theory has stood the test of scientific methodology, that bias has been checked and controlled (when

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converting from *personal knowledge* to *shared knowledge*), it becomes impossible to determine bias in shared knowledge. We should instead accept different theories as different solutions to the problems of the scientific community and that they all play a positive role in the pursuit of knowledge. In history, we have established that achieving an objectively existing past is impossible. As perspectives are all we ever have, the notion of bias becomes inapplicable. Instead of selecting among rivalling perspectives, we should instead allow multiple (often contradicting) perspectives to exist where a holistic consideration of such perspectives plays a positive role in the pursuit of knowledge.

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