

Saturday, June 26 9-12 AM, rm. 141
Symposium: Induction - Aristotle to Mill

Cassandra Pinnick, “Two Problems of Induction and Bacon’s Failed Claim to Fame”
Rose-Mary Sargent, “Science in the Public Interest: The Relationship between Baconian Induction and the Common Good”
Abraham S. Roth, “The Necessity of Necessity: The Significance for Hume of the Idea of Necessary Connection”
Godfrey Guillaumin “What is “modern” in the seventeenth-century idea of evidence?”

From Aristotle to Mill:
The Changing Methods and Goals of Induction

Discussions of induction are much more complex and context dependent than normally assumed. The ways in which philosophers have created particular versions of induction based upon their differing logical, practical, psychological, political, social, and moral concerns are exhibited here in a series of four papers. The crucial role of contextual understanding is revealed by the apparent tensions between such diverse interpretations of induction. The symposium will proceed in the following order.

Cassandra Pinnick’s paper, “Two Problems of Induction and Bacon’s Failed Claim to Fame” focuses on induction as a logical method of establishing generalizations from particulars. Pinnick argues that unlike earlier Aristotelian philosophers, Bacon depended upon what is *given in observation*. Thus Bacon failed to provide later experimentalists with a viable methodology for discovering underlying causal structures and entities. Rose-Mary Sargent’s “Science in the Public Interest” focuses instead on the practical elements of Bacon’s methodological discussions. Sargent argues that Bacon’s desire to acquire knowledge that could be used for the common good led him to design a dynamic experimentalism that was to remain fallible and open to revision by future generations. Abe Roth, in “The Necessity of Necessity” focuses on the psychological perspective of Hume’s induction. Although Hume is famous for his formulation of the problem of induction, Roth argues that the *idea* of necessary connection was an essential component in Hume’s psychology of causal inference and that we must look to Hume’s practical philosophy to understand the source of that idea. Laura Snyder’s “Reforming the Philosophy of the Age” focuses on nineteenth-century attempts to reform induction. Both Mill and Whewell had a desire to improve society, yet they had different ideas about how such reforms should take place. Snyder argues that their particular moral and social goals provide the context that is necessary for understanding their debates over the proper reform of induction.

Two Problems of Induction and Bacon's Failed Claim to Fame
Cassandra L. Pinnick

ABSTRACT

“We have as yet no natural philosophy that is pure; all is tainted and corrupted . . . From a natural philosophy pure and unmixed, better things are to be expected.” *Aphorism XCVI*
So wrote Francis Bacon. One can wonder about the propriety of Bacon’s dismissive attitude toward previous philosophy of science and his boast for the promise of his “new” logic. Bacon’s target is Aristotle’s concise remarks about induction and the action of the intellect on perceptions, found in the *Posterior Analytics* 19. Bacon’s bid to secure the position of dean of experimentalism would have held more promise had he worried the problem of induction along the lines of Medieval philosophers Robert Grosseteste (c. 1168-1253) and William of Ockham (c. 1280-1349), who viewed the problem as one about the rational warrant for what we would call observationally equivalent general sentences. By contrast, Bacon’s primary focus remained on the rational warrant by which the experimentalist might reason from particulars to general claims, and his methodological remarks never provide the foundation for experimental investigation into the underlying microstructure and microentities of nature. Rather, Bacon assumes that the decisive sign sought in *Instantiae crucis* will be given in observation. As the work of later experimentalists shows, and as Grosseteste and Ockham worried, it is exactly when observation is to no avail that the most serious methodological questions take hold. Thus, Bacon fails to situate himself as the intellectual linchpin of experimentalist methodology because he contributed no more to the problem of induction than a concern for reasoning from particulars to general sentences.

Science in the Public Interest:

The Relationship between Baconian Induction and the Common Good

Rose-Mary Sargent

ABSTRACT

This paper provides an examination of how Bacon designed his particular version of inductivism as a means for discovering knowledge that could serve the public interest. First, a non-utilitarian interpretation of Baconian “usefulness” is developed. This is followed by an account of his inductive method that emphasizes the active and fundamentally fallible elements embedded within it. Bacon argued that a dynamic and open-ended process, which would likely require future revisions in both theory and method, was more reliable than other extant methods for acquiring knowledge that could be used for the common good. Such an interpretation of Baconian induction calls into question the common belief that he advocated a methodology devoted primarily to fact gathering and the mechanical discovery of empirical, law-like regularities. It also explains more fully why he was opposed to an over-reliance on mathematics and the construction of elaborate philosophical systems. Subsequent generations of English natural philosophers who credited Bacon as their primary influence shared his goal and recognized the need for a complex method to achieve it. The paper ends with a brief account of

how Robert Boyle, within the public sphere of the Royal Society, and Humphry Davy, through his public demonstrations at the Royal Institution, sought to encourage others to embrace this Baconian ideal.

The Necessity of Necessity:

The Significance for Hume of the Idea of Necessary Connection

Abe Roth

ABSTRACT

The idea of a necessary connection between cause and effect figures centrally in Hume's thought. This might come as a surprise, given that Hume is generally regarded as the most famous proponent of the regularity view of causation. Regularity theorists deny that there is some *necessary* connection between cause and effect, such that the presence of the cause in appropriate circumstances in some sense *must* be followed by the effect. Be that as it may, I will suggest that the *idea* of necessary connection is an essential component in Hume's *psychology* of causal inference. On the usual view, Hume takes causal inference to be the result of a habitual and mechanical association of ideas that assigns no significant role to the idea of necessity. But this leaves Hume with an account that works only for the simplest of inferences. I argue that we must recognize the significance of the idea of necessary connection in order to discern in Hume a picture of causal inference that better addresses the more deliberate or sophisticated reasoning to be found in science, not to mention in much of ordinary life. Seeing his psychology in this way greatly increases the significance of Hume's discussion of the origin of the idea of necessary connection, and imposes constraints on how we are to interpret that discussion. I will draw on Hume's practical and moral thought in offering a new account of what Hume takes to be the source of our idea of necessary connection.

What is "modern" in the seventeenth-century idea of evidence?: a new turn about the emergence of modern notion of evidence

Godfrey Guillaumin

As it is well known, Ian Hacking (1975) confined the emergence of the notion of modern evidence to the XVII century. Nevertheless, many authors like Milton (1987), Garber and Zabell (1979), Laudan (1981), etc., have shown without doubt that it is easily located the notion of modern evidence among ancient medicine and mathematical astronomy. According to the analysis that I present here, if the critics on Hacking's idea are correct, then a question has been overlooked throughout the discussion, namely, what (and how) was the beginning of what we recognize as "modern" evidence? Many authors, like Franklin (2001), Dear (1995), Daston (1991), among others, have recently argued interesting ideas about this issue from different points of view. My thesis here is that it is possible to establish that a break during the XVII century between the ancient ideal of knowledge and the

idea of discovery nested in concrete investigations of natural world generated favorable conditions to develop our notion of evidence. This thesis has two interesting epistemic and historical aspects with respect to the beginning of modern evidence. On the one hand, that this tension was an ancient one, not a conception generated during the XVII century. It is possible, quite contrary, clearly detected in some Aristotle's works and among other earliest works, so it is very important to grasp what was really "new" in a very old tension. On the other hand, one of those conditions generated by such rupture was a change in the conception of the relation among demonstration and empirical evidence. Contrary to a long tradition in the philosophy of science that considered the context of discovery as a philosophically irrelevant subject, I show here how discovery was a crucial epistemic element at the beginning of our modern notion of evidence.

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