

### **Topic 1: Locke on Primary and Secondary Qualities**

In the late 1600s, John Locke set out to establish knowledge of the existence of an external world on the basis of empirical perception. To achieve this goal, Locke presented a series of observations regarding sensory experience that he felt were best explained by supposing the existence of an external world that resembled our perception of it in terms of the primary qualities of bodies. Then, by the principle of inference to the best explanation, Locke concluded that we have knowledge of such a world because the best explanation for a body of empirical data is likely to be true. Although Locke's argument is by definition invalid, it is inductively strong because its premises are true by inference to the best explanation, make it very unlikely for its conclusion to be false.

In order to comprehend Locke's epistemological argument, we must first develop an understanding of the concepts central to this argument. Locke uses the term "bodies" to refer to objects occurring in nature (Locke 1690, 197). Bodies are characterized by their "qualities," or attributes, which have the power to cause ideas in the mind (Locke 1690, 197). "Ideas, in turn, are defined as perceptions of bodies in the mind (Locke 1690, 197). Qualities are further described as either "primary" or "secondary" (Locke 1690, 198). Primary qualities are intrinsic attributes of bodies that do not depend on perception or the existence of any other thing (Locke 1690, 197-198). Secondary qualities, on the other hand, are relational attributes that produce various sensations in perceivers (Locke 1690, 198).

Having defined these terms, Locke presents an inductively strong argument that establishes the reliability of our ideas of the primary qualities of bodies. The first premise of the argument begins with a series of observations that, when carried to the logical conclusions, are

best explained by the existence of an external world in which bodies accurately represent ideas in respect to their primary qualities.

Locke's first observation is that sensory experiences are produced by something than the sense organs (Locke 1690, 202). Locke argues that, if sensory experiences were caused by the senses, then individuals would be able to produce whatever sensory experience they desired in any situation (Locke 1690, 202). Individuals would therefore be able to produce the smell of roses in a barren field in the middle of winter. As this is impossible, Locke rejects the premise that sensory experiences are caused by the senses. However, the existence of sensory experiences necessitates a cause. Locke therefore concludes that the best explanation for this cause is the existence of bodies external to the mind (Locke 1690, 202). For instance, the most convincing explanation for the taste of a pineapple is eating a pineapple that actually exists external to the mind (Locke 1690, 202).

The second observation that Locke offers in support of his conclusion is that certain sensory experiences seem uncontrollable (Locke 1690, 203). Locke begins by distinguishing between two types of ideas: ideas that are caused by the mind when the senses are inactive and ideas that appear before the mind when the senses are active (Locke 1690, 203). In a state of sensory deprivation, Locke claims that it is possible to produce and dispose of ideas in the mind at will (Locke 1690, 203). Locke therefore argues that, if all ideas were caused by the mind, individuals should have complete control of their ideas in all situations. When our senses are active, however, we lose control of our ideas (Locke 1690, 203). For instance, it is impossible to dispose of the idea of light while staring directly at the sun. It is therefore impossible for all ideas to be caused by the mind. As there must be a cause for these ideas, Locke concludes that the best explanation for the cause is a world external to the mind (Locke 1690, 203).

Locke's third observation is that certain sensory experiences are frequently accompanied by vivid feelings such as pain or pleasure (Locke 1690, 203). If these experiences were caused in the mind, Locke argues, then thinking of them should cause pain (Locke 1690, 203). For example, an individual should feel pain when thinking of cutting his finger. Recalling these experiences does not cause pain, however, so it must be the case that they were caused by something other than the mind (Locke 1690, 203). Once again, Locke concludes that the best explanation for the cause of these painful experiences is the existence of a world external to the mind (Locke 1690, 203).

The fourth and final observation is that there is a great deal of internal coherence among sensations of the different senses (Locke 1690, 203). For example, an individual that sees a fire can confirm his visual sensation by placing his hand in the fire and feeling the pain associated with burns. Alternatively, a basketball both appears and feels round. Locke concludes that this coherence is best explained by supposing that the qualities of objects are regular in the same manner that sense experience is regular (Charlow 2008, 2)

In the second premise of the argument, Locke proposes that the best explanation for his observations is that our experiences are caused by bodies external to the mind that resemble the ideas they produce in us with respect to their primary qualities (Joyce 2008). In the third premise, Locke makes use of inference to the best explanation and concludes his argument by stating, with a high degree of probability, that our experiences are caused by bodies external to the mind that resemble the ideas they produce in us with respect to their primary qualities (Joyce 2008).

Locke's ultimate goal in this argument is to establish knowledge in the existence of an external world that resembles our perception of that world. To strengthen his case, Locke distinguishes between primary and secondary qualities. Locke argues that our knowledge of the

external world depends on our perception, which is a function of the qualities that objects possess. However, not all perception is reliable, as is the case with secondary qualities. Locke argues that our perception of secondary qualities is unreliable for three reasons.

First, Locke argues that that our ideas of secondary qualities such as cold and heat are falsely represented as positive qualities (Locke 1690, 197). In reality, these qualities simply represent the absence of some other quality, as cold is the absence of heat (Locke 1690, 197). We fail to make this distinction and falsely believe that these qualities are actually in a body, “without taking notice of the causes that produce them” (Locke 1690, 197). Secondly, conditions such as colorblindness demonstrate the ways in which our perception of secondary qualities depends on the functioning of our perceptual system, rather than the qualities that are actually intrinsic to bodies (Charlow 2008, 2). Finally, although secondary qualities are relational, we perceive them as intrinsic (Charlow 2008). The yellow color of a banana exists in relation to light, yet is perceived as a quality that is actually in bananas. Therefore, secondary qualities do not accurately represent the qualities that exist in bodies, and cannot be used to support the existence of an external world.

Locke’s argument for the existence of an external world that reflects our perception of primary qualities is inductively strong because its premises are true by inference to the best explanation, making it very unlikely that its conclusion is false. Whether or not we accept Locke’s argument as true depends on our criteria for knowledge. Locke’s reasoning would certainly not satisfy Descartes’ call for justified, true belief. I, on the other hand, believe that inference to the best explanation is sufficient for knowledge. It has been shown that each of Locke’s premises, including his four observations, withstand the test inference to the best explanation. Thus, we can know that an external world exists, as well as the nature of such a

world, simply by perceiving the primary qualities of bodies. Our perception of primary qualities—but not secondary qualities—can therefore be known to be reliable.