

Locke's Distinction Between Primary and Secondary Qualities as Partly Correlated with Kant's Account of The Thing in Itself

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Abstract

In this research, I propose intertwined arguments regarding John Locke's distinction between primary and secondary qualities in the *Essay Concerning Human Understanding*. Firstly, I will show how Locke's distinction between primary and secondary qualities causes several problems of perception. Secondly, I demonstrate how such problems affect how we might see this distinction in a way that partially supports Kant's concept of the thing in itself. To begin, I provide a brief history of the topic before delving into Locke's description of empiricism and interpreting his writing on primary and secondary qualities. Next, I discuss the problem of primary qualities, considering the interpretation of solidity and Locke's resemblance thesis. The analysis in the last section demonstrates how inconsistency with the respect to ideas of power and sensation lead us to believe that Locke's account generates Kant's account of the thing in itself.

Keywords

John Locke – Immanuel Kant – primary quality – secondary quality – perception – solidity – resemblance

1 Distinction Between Primary and Secondary Qualities and the Structure of Such a Distinction in Locke's *Essay*

In this section, I will provide some background on the distinction between primary and secondary qualities, as well as the structure of John Locke's (1632–1704) *Essay Concerning Human Understanding* as a prelude to pointing out how Locke's inconsistency over such concepts leads to the problem of primary qualities, which I will examine in greater depth in the following part.

To begin, even though it is common knowledge that Western philosophy has focused on the discovery of the Truth or the foundation of all things since the pre-Socratic era, the distinction of elements of things or the terms primary and secondary qualities, were not commonly used by the pre-Socratic philosophers or even among Greek philosophers at the time of their discovery. Only “what appears to the senses” and “those things that can be perceived” were considered in ancient times (Lee 2011, 15). It was not until Democritus, the atomist philosopher, defined the foundation of all things as atoms or void that this distinction became acceptable as *locus classicus*, and was later developed into mechanical philosophy, or a philosophy that indicates that the entire physical world is made up of minute particles; a philosophy which was led by Aristotle, Decartes, Galileo, Boyle, Newton and Locke.

Among these, Locke's *An Essay Concerning Human Understanding* was regarded as one of the most significant works contributing to the establishment of empiricist knowledge in modern philosophy and it helped Locke himself to clear up the foundations of knowledge that had been influenced by mathematical induction on the constituent of rationalist philosophers who believed experiences to be unnecessary for human knowledge.

Locke's metaphysical views in the *Essays* were shaped by growing corpuscularian theory (which I define above as the philosophy that believes the entire physical world is composed of minute particles) in conjunction with the Aristotelian concept of sensible qualities. Consequently, he strived to understand the relationship between sensible qualities and the mechanism of corpuscularians in order to establish human experiences as a source of ideas and knowledge.

This became the framework used in the *Essays* as Locke wanted to ground the new foundation of knowledge in human experiences, therefore he began with discussion and rejection of the doctrine of innate ideas in Book I. He then opened Book II with a long chapter “Of Ideas in general, and their Original” (Locke 1700, 117), which he set up as an empiricist account of the source of human ideas; Locke insisted that if human ideas are not innate, then they must come from our experience (Wilson 2016, 196). He then distinguished between

two sources of ideas; on the one hand, "Fountains of Knowledge, from whence all the Ideas we have or can naturally have do spring" (Book 11.i.2) and, on the other, "the Perception of the Operations of our own Minds" (Book 11.i.4). From this point, we can see that Locke held that all materials of human knowledge and understanding arise from experience in the form of ideas, and each of those ideas can be divided into two categories, namely, our senses and our reflection and sensation.

In Book 11. ii, "Of Simple ideas" (Locke 1700, 137), Locke distinguishes between simple and complex ideas and suggests that these simple ideas and the materials of our knowledge will present themselves to our minds in only the two ways mentioned above, namely, sensation and reflection. Locke goes on to suggest that, to consider and evaluate the different ideas that objects produce to our minds, the qualities within the object itself must be understood in order to distinguish different ideas that we perceive through our senses.

In Book 11.viii.8, while Locke defines both primary and secondary qualities as having the power to produce ideas in our minds, he gives the specific notion in chapter viii.9, that primary qualities (solidity, extension, figure, mobility)¹ are inseparable from and intrinsic to the observable bodies of objects. He uses a grain of wheat as an example, saying that even if we try to divide that grain of wheat until it becomes insensible, each portion will still contain such primary qualities in its particles (Locke 1700, 161).

Locke, then, suggests that such qualities of objects are sensed through the mechanical or the motion of corpuscles on our human sense organs. Therefore, even if the grain of wheat is divided into a single isolated corpuscle, such a corpuscle will still contain the very primary qualities of objects that are essential and play an important role as a factor mediating between the sensing of primary qualities (in observable bodies) and the corresponding simple ideas (in our minds) (Wilson 2016, 207).

In Book 11. viii. 10, Locke introduces other qualities which are not in the objects themselves but are "Powers to produce various Sensations in us by their primary Qualities" (Locke 1700, 162). These qualities are what Locke defines as secondary qualities or sensible qualities and are exemplified by colors, sounds, tastes and smells. After that, as we shall see in sections 13–14, Locke expresses that that secondary qualities are "also produced by the operation of insensible particles on our senses" (Locke 1700, 163–164).

¹ In this essay, I use the definition of primary qualities provided by Locke in Book 11.viii.9. However, I consider solidity, extension, figure, mobility to be synonymous with, respectively, shape, size, texture and motion.

The major role of Locke's idea of secondary qualities causes inconsistency and contradiction to some degree, as he later uses the example of the idea of pain to draw a clear contrast between primary and secondary qualities. The concept of pain illustrates that secondary qualities are able to produce several different ideas in us by operating on our bodies, and this also implies that the ideas produced by secondary qualities have no resemblance to the bodies themselves. This is in contrast to the example of the grains of wheat mentioned above since, even if both qualities are comprised of the insensible particles, as Locke says in Book II. viii.13, the primary qualities are primary because they belong to all bodies as perceived. Consequently, we cannot conceive of an object or matter existing without primary qualities, whereas we can conceive of any existing object or matter as lacking certain secondary qualities. This means that primary qualities involve observable processes, and our understanding of objects and secondary qualities can be regarded as a causal relationship between the body and sensation produced within us.

This contradiction continues in section 23–26, where Locke also mentions “a third sort” (Locke 1700, 170) of qualities, which are called “Powers” (Locke 1700, 169–172). Here, Locke uses the sun's power to make wax turn white as an example of its ability to produce change in other bodies. In this case, the change results from various modifications of the wax's primary qualities. In this sense, if we directly perceive the melting wax, then the change which we observe would manifest its causal role, referring to the mechanical process or the change of the motion of small particles in the wax; however, the sun itself does not seem to be composed of the power of melting something. In other words, there are no observable qualities in the sun which allow us to identify causal relations between its features and the action of melting produced in other objects.

It is clear that secondary qualities are not always the result of primary qualities. This not only contradicts what Locke asserts in Book II.viii.10, but it also leads to the observation that there are at least three elements of secondary qualities, based on what Locke writes in the *Essay*.

- (1) Secondary qualities are those that can generate sensations in us as a result of primary qualities. In this sense, the attributes of solidity and space that belong to the grain of wheat will become a casual relation or a cause that resembles the ideas and sensations that exist in our minds, as claimed by Alexander (1974), Ayers (1991) and Woolhouse (1983).
- (2) Secondary qualities cause various sensations in us independent of primary qualities. In order to illustrate this, let us consider how we perceive the heat of fire. It appears that the feeling operated by the particles

towards our sense organs does not present itself as a causal effect correlated to the primary qualities. The feeling or pain we perceive from heat is distinct from other causal effects we perceive from other attributes, such as the roundness of a ball or the solidity of a cog (Ayers 2011, 9).

Regarding this, the feeling produced in our sensation demonstrates that there are several cases in which secondary qualities are not the casual role of the feature – possession by all bodies – of primary qualities. As a result, we can think of sensation in our minds as a purely subjective phenomenon caused by secondary qualities and it is by this means that Locke draws the incommensurable gap between something essential or non-essential to the properties of bodies, as well as the distinction between appearance and reality.

- (3) Locke mentions “a third sort quality” (Locke 1700, 170) in Book II.viii. 23–26. These tertiary qualities are introduced by secondary qualities, with the result that they become qualities of the mere power that can produce changes in other objects, which refers to what Nathan Rockwood defines as “hidden qualities” (Rockwood 2020, 3).

With this term, Rockwood indicates that there are qualities or characteristics of objects that express their potential, while their true power remains concealed and is not visible from the exterior. This is analogous to the glass vase, which is currently fragile even though it is not currently breaking (Rockwood 2020, 3). In this sense, fragility is a quality of a character of the glass vase, but it remains concealed and cannot be regarded as a causal link to the body when examined from outside; in short, secondary qualities might be dispositional properties to some extent without exhibiting their properties.

This is paralleled by the abilities of the tertiary qualities and their connection with secondary qualities mentioned by Locke in viii.10. Here, it becomes clear that the tertiary qualities and secondary qualities have the same ontological status, since Locke claims that both of them are “powers to act differently upon other things” (Book II.viii.23), contained in the primary qualities that a body possesses. Also, Locke suggests that we usually think of tertiary qualities, which produce changes or the ideas of fluid, whiteness, and softness of the melt wax, as “barely powers” (Book II.viii.24), and mentions in section 26 that both secondary qualities and the power of tertiary qualities to produce changes can be identified as “mediately perceivable” (Locke 1700, 172). By this, Locke reaffirms the dispositional position of Rockwood mentioned above and partly reveals how secondary qualities and tertiary qualities are correlated.

2 Problems of Contradiction of Primary Qualities

Considering the distinctions drawn by Locke that were discussed in the previous section, I will demonstrate further, in this section, how such a structure leads to a problem with primary qualities. However, I will argue that the issues raised in this section will ultimately provide a new perspective on Locke's distinction and will demonstrate the parallels between his concept and Kant's things in themselves in the concluding section, which comprises the research paper's original contribution.

To start with, let us imagine that if there is a chair in a room, then it will have a specific shape and size, and it will be in a specific state of rest or motion. Furthermore, it is composed of small particles that move quickly inside the material even while the chair is at rest. Therefore, if we switch on the light, the chair will have color, which is reflected from the arrangement of the small particles of its material.

This means that all of the properties of the chair – both primary qualities and secondary qualities – are composed of the small particles which need to be solid or so impenetrable as to “exclude any other particle from the same place” or “keep any other particle out of the place where it is” (Mackie 1976, 9). As Locke says in Book II.viii.26:

To conclude, besides those before mentioned primary qualities in Bodies, viz. Bulk, Figure, Extension, Number and Motion of their solid parts; all the rest, whereby we take notice of bodies and distinguish them from one another, are nothing else, but several powers in them, depending on those primary qualities...

This statement implies that solidity is one of the common properties of corpuscles and they cannot be differentiated. In this sense, on the one hand, solidity for Locke is not just one of the primary qualities along with extension, impenetrability and the power to exclude other things of the same sort but is rather the ground of these qualities (Alexander 1985, 133). Solidity becomes the primary of primary qualities, since we have to consider solidity as the ground of invisible particles within objects, based on their particular arrangement and motion.

Moreover, in this sense, solidity is necessary for other properties of these objects (color, smell, taste) and for the power to produce change in other objects. Therefore, by this means, Locke's explanation and discussion regarding solidity and extension do not point out only the properties of primary qualities which indicate fundamental feature possessed in the object; rather, Locke

embraces the manner in which solidity and extension are deducted from the inertia of small corpuscles of which the objects are composed (Hatfield 2011).

This also suggests that Locke's discussion of primary qualities is similar to the concepts discussed in Kant's early writings in the 1740s and 1750s, in which he posited that all substances are space-filling or, as he put it more precisely, that all the bodies of everything in this world appear as representations that are casually related to the unknown called "things in themselves" (Kant 2004, 35).

To demonstrate this point and expand on the parallels between Locke and Kant on this topic, we can return to one of Kant's works, *Prolegomena to Any Future Metaphysics*. In this work, Kant similarly categorizes qualities of things into two broad categories, primary and secondary qualities as follows:

That one could, without detracting from the actual existence of outer things, say of a great many of their predicates: they belong not to these things in themselves, but only to their appearances and have no existence of their own outside our representation, is something that was generally accepted and acknowledged long before *Locke's* time, though more commonly thereafter. To these predicates belong warmth, color, taste, etc. That I, however, even beyond these, include (for weighty reasons) also among mere appearances the remaining qualities of bodies, which are called *primaries*: extension, place and, more generally, space along with everything that depends on it (impenetrability or materiality, shape, etc.), is something against which not the least ground for uncertainty can be raised; and as little as someone can be called an idealist because he wants to admit colors as properties that attach not to the object in itself but only to the sense of vision as modifications, just as little can my system be called idealist simply because I find that even more of, nay, all of the properties that make up the intuition of a body belong merely to its appearance: for the existence of the thing that appears is not thereby nullified, as with real idealism, but it is only shown that through the senses we cannot cognize it at all as it is in itself.

KANT 2004, 289

Kant, like Locke, regarded secondary qualities as simply sensations or qualities capable of producing sensations or ideas in the perceiver. In this sense, referring to *Prolegomena* first part, Note 2, Kant bases his description of secondary qualities such as color on Locke's notion that color may produce a variety of sensations and ideas through its bodies. Here, the body referred to the causal law between the thing in themselves and the appearances of the object, which Kant believed was founded on the laws of repulsion and spatial force.

However, if we consider solidity to be a primary quality or property in general that is observable in bodies of objects and as something that is causally related to secondary qualities or related to the first feature of secondary quality mentioned earlier, then solidity is meant to play two roles. First, it must be within the objective features that resemble the ideas of the chair that those features give rise to and in us; and second, it has to be a feature that we can use as an explanation of objects in general. In this respect, if we consider a chair as something made up of small particles and possessing solidity, and that solidity is required to establish a causal relation between the chair's attributes, then it appears that solidity can play the latter but not the former role because we can only comprehend the concept of impenetrability from it, but not the concept of "keeping things out of region" (Mackie 1976, 25).

For example, if we imagine a blind man who is in the room with a chair, once he touches the chair, he will perceive resistance or the idea of impenetrability that marks a difference between his hand and the chair (or any other object). He can by no means perceive the idea of excluding other things even if solidity is the ground of such an idea since, in order to do so, he has to compare the idea of space between two objects. From this point, as we can see by the statement in Book II.xiii.10, entitled, "Our Idea of Place, is nothing else, but such a relative position of anything", Locke also continues to affirm that an object is needed in order for us to perceive the idea of space. He states:

We can have no idea of the place of the universe, though we can have all the parts of it. (Locke 1700, 211–212)

This means that Locke accepts the idea of space or the empty space independently from the object. But if we consider the universe as an object in empty space, then Locke does not accept that the universe can mark its place with its own existence, and refers to such existing space (Alexander 1985, 136).

This is analogous to the blind man touching the chair in the sense that he cannot provide a reference to the idea of excluding other things by perceiving or getting through the empty space. The empty space without objects cannot refer to or exclude other things, but merely becomes a room for objects. Therefore, he has to find another chair or another object in the empty room in order to perceive the idea of excluding other things from a specific space. Therefore, as Locke identifies solidity, it is an idea that "we receive by our touch" in Book II.iv.1 and Book II.iii.1. How, then, can Locke qualify this way of perceiving objects with a single sense since for the blind man to perceive the relation between two things, he probably needs more than one sense in order to experience some concept of spatial relation, such as direction and distance? (Ayers 2011, 6)

It is at this point that the distinction between Locke's and Kant's concepts of space must be clarified. As previously stated, Locke adopts the corpuscular

hypothesis, which holds that ordinary things in the world possess not only primary but also secondary qualities and are sustained by inertia or motion of corpuscles. This becomes a hypothesis for Locke to adequately grasp natural phenomena as “things themselves” (Tomida 2008, 261), and it means that Locke accepts the affection through our senses, and assumes that the motion of corpuscles that eventually give us ideas such as space and extension are the things that communicate from sense organs to our brain (Tomida 2008, 265).

This further implies that, according to Locke, our perception of space will be mediated by experiencing objects. This is partly contrary to Kant's views on the concept of space, as he claims in both *Prolegomena* and *Critique of Pure Reason* that such a concept can be cognized by us “a priori” (Hatfield 2011, 304). In claiming this, Kant means that the concept of space (and time) is inherent in all of us before any perception or experience is conceivable. As a result, Kant regards such a concept as a form that eventually frames all the appearances or sensible representations of the thing in itself and allows appearances to exist in the physical world.

This distinction entails the reason why Locke does not perceive that the manner in which he accepts solidity as the idea of perceiving objects through a single sense cannot be qualified. This is because, according to Locke's concept of space and the things themselves described above, for example, a blind man has to rely on some secondary qualities such as temperature on the surface in order to adequately perceive ideas of solidity or extension. On the other hand, the blind man's perception of impenetrability is insufficient for him to have the mental idea of solidity. This leads to a contradiction in what Locke says about the concept of primary qualities, in which he claims that they can provide the perceiver with adequate concepts of an observable body of objects. This also leads to ambiguity in Locke's concepts of resemblance of ideas and primary qualities, since no one can prove whether the idea of solidity – impenetrability and excluding other things – which the blind man perceives is similar to the equivalent ideas in the minds of sighted people. However, based on this contradiction, in the final section, I will demonstrate and expand on why it is this issue that depicts how a part of Kant's thing in itself is correlated with Locke's distinction.

3 **Locke's Problem of the Veil-of-Perception as Degeneration of Kant's Representationalism Without Veil**

As discussed in the previous section, it seems that the way Locke distinguishes between primary and secondary qualities is an obstacle to perceiving an object as a whole. In order for a blind man to perceive the solidity of an object and

have an adequate idea of it, he has to depend on more than one object and more than one sense. From this point, the way he perceives solidity through touch – relying on only one sense – leads to Jonathan Bennett's claim that Locke's distinction is in error; the link between sensory perception and existence of objects in reality cannot be formed (Bennett 1965).

However, as I pointed out in the previous section, Locke's account correlates to and sheds light on how Kant develops his understanding of space since Locke's spatial idea is based on experiential objects and perception. Given that the blind man cannot have an adequate idea of solidity in his mind, this raises the question of how the blind man can assert that the idea of solidity or the idea of the chair in his mind, represents the true object that exists in reality. According to Allais, this partly refers to the mechanism of spatial force or repulsion that frames a component of the physical object in Kant's sense and it is analogous to how Kant considers the thing in itself or the essence of things as "unknown" (Allais 2007, 462). Even though it is obvious to Kant that the thing in itself that is separated from appearances of things is unknown, in order to grasp perceptual experience and reaffirm that human capacities are adequate to understand and live upon those experiences, Kant affirms and takes the position that there are intrinsic values which are real and non-illusory to those things. This idea is analogous to what Locke explicates in Book III.vi.9, as he maintains that our experiences are sufficient to serve as resources for our knowledge. By doing so, he also confirms Kant's notion of two distinctions between substances and their essence, which is inaccessible to our experiences:

Nor indeed can we rank, and sort things, and consequently... denominate them by their real essences, because we know them not. Our faculties carry us no farther towards the knowledge and distinction of substances, than a collection of those sensible ideas, which we observe in them.

Locke here contends that, while he does not reject the existence of the essence of things because we are unable to access that true essence, our sensory states are adequate for us to discern between primary and secondary qualities and gain knowledge. This is parallel to the way in which Kant affirms that our human capacities are adequate to integrate experiences with the frames of space and time to access the intrinsic values of things.

The issue arises again for Locke in Book II.ix.9, as he considers sight as the most comprehensive of all our senses. Certainly, this is debatable since one may argue that if a man were born with colorblindness and he perceived everything in the world as being as brown as an almond, then others would by no means accept the color that he perceived since common colors that we

usually perceive are the blueness of sky, whiteness of cloud, redness of fire and so on. As a result, the man born with color-blindness will never know whether the things he perceives represent true qualities of objects that exist; his sensory perception is unreliable. Moreover, Locke also questions changes in primary qualities (the almond's texture) in Book II.viii.20, meaning that it is difficult to distinguish between green grains of wheat and an almond once they are beaten with a pestle and become small particles. In other words, it is difficult to separate one object from another when its observable body has changed. This means that a person will not only ultimately be unable to distinguish between primary and secondary qualities, but that person's idea of an almond will not be consistent with the almond as we understand it. Since, as we have already discussed in the previous section, primary qualities of object such as texture and shape cannot provide adequate ideas of an almond as it exists in reality.

Further, let us suppose that there is a dictator of the world who determines to kill all the people who are born without color-blindness and allow people who are born color-blind to survive. Consequently, as people get married and have offspring, then color-blindness will become genetically dominant. However, as there would be a few people born without color-blindness in the second generation, there will still be a number of people who see things as we see today. At that point in time, most people in the world would commonly accept that the things which we see in this world are as brown as almonds.

This example demonstrates that Locke did not recognize that the way we perceive secondary qualities can be changed by physiological factors, and the idea of perceiving objects with a single sense can become sense-relative. If this is the case, then this example invites us to question whether there is any quality in the existing thing itself.

From this point, there are two ways to argue against the example of sensory aberration and resolve the issue of physiological change. First, one could say that color is not one of the properties of existing things in the world. The second argument would be that it is necessary to accept that color does not belong to secondary qualities. This would consequently mean that color is not one of qualities included in powers which affect us by virtue of primary quality as Locke says. It would be more reasonable to argue against the latter and instead take colors as the ground of disposition of properties within objects which cause relevant experience in us (Campbell 1993, 257–268). However, by taking this position, in order to solve the problem of sensual aberration, the interpretation of Locke's account is again inextricably linked to Kant's explanation of the object in itself.

As we covered previously, Kant distinguishes between the thing in itself and appearances. Kant also claims that the conditions of the possibility of

experience are not merely sense-data or representations in our minds that exist independently of real objects. Instead, Kant returns to conceptions of space and time to explain this issue, claiming that these components allow the appearances of objects to be real and non-illusory. By doing so, Kant develops what Campbell refers to as “the simple view” (Campbell 1993, 257) into what he refers to as “the relational view” (Allais 2007, 468).

By using this phrase, he contends that all actual objects have the colors we ordinarily take them to have. Colors in things which Kant considers to be secondary qualities are a component of conscious experience observed in time and space. Therefore, on the one hand, colors or secondary qualities of an object represent sensations produced in our minds, as Locke stated but, on the other hand, also consist of intrinsic values that appeal to one's mental state. In short, colors in objects are essentially perceptual for Kant; snow that appears to be white is white, and we can also explain the different hues of whiteness by the visible colors. According to this viewpoint, the true nature of common color qualities is transparent to us, and as a result, the only way to comprehend the attribution of particularity to colors is to perceive it.

In this sense, by resolving this problem, the issues between Locke and Kant can be resolved. Even if Kant's account of the thing in itself is correlated with Locke's account of perception, the difference in this issue of color is that, for Kant, whiteness of snow is not based on the motion of corpuscles within objects as it is for Locke, and it is also not identical to the ability to produce experiences in us. Kant considers whiteness of snow as a representation of the thing itself that is “sensible” (Tomida 2005, 679) and to the extent that it is not merely a reflection of our state of mind in contrast to Locke.

4 Conclusion

The preceding argument shows that Locke's distinction between primary and secondary qualities was unsuccessfully conceived in the first place. Since, as is shown in the second section, we see from the example of the blind man that solidity cannot give him an adequate idea of the observable body, it cannot be regarded as a primary quality of objects, which makes Locke's resemblance thesis ambiguous. However, as discussed in the next section, as the problem of veil-of-perception arises, the contribution of this research paper is to illustrate how the account of Kant's thing in itself is generated upon the incommensurable gap between Locke's primary and secondary qualities. By this means, I also propose in the last section that if we adjust Kant's relational view and take secondary qualities as the ground of qualitative character within objects, then

we can resolve those tensions and understand the correlation between Locke's and Kant's distinction from a new perspective.

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