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# LOCKE'S LIFE-WORLD: THE TELEOLOGICAL ROLE OF SECONDARY QUALITIES

Martin Lenz

*Life no argument.* We have arranged for ourselves a world in which we can live—by positing bodies, lines, planes, causes and effects, motion and rest, form and content; without these articles of faith nobody now could endure life. But that does not prove them. Life is no argument. The conditions of life might include error.

Friedrich Nietzsche, *The Gay Science*, § 121

## Abstract

This paper argues for a new understanding of Locke's view on secondary qualities. While they are commonly discussed with regard to their mind-dependence and contrasted with primary qualities, I will consider Locke's teleological arguments for their indispensability. Secondary qualities, I submit, should be seen in the teleological framework according to which they are designed with regard to our needs and purposes. Having to account for cross-purposes and relativity to different kinds of beings, secondary qualities will be shown to provide the crucial ingredients of our life-world that make for a suitable and shared environment.

Keywords: Locke, secondary qualities, teleology, life-world

## INTRODUCTION

Is snow white even if no one sees it? Seventeenth-century philosophers, and John Locke in particular, are famous for distinguishing between mind-dependent secondary qualities, such as colors or sounds, and mind-independent primary qualities, such as motion or shape. In view of this distinction, it is tempting to answer that snow isn't really

white; it only seems so to certain cognizing subjects, while, in fact, it is an array of moving particles. This way of distinguishing between these qualities has raised many questions about the exact criteria for the distinction. Since the distinction is mainly discussed as a hallmark of the so-called scientific revolution or mechanistic philosophy, the focus is mostly on the question of whether secondary qualities are subjective and can be reduced to primary qualities.<sup>1</sup> Whereas the whiteness of snow just seems to be in the eye of the beholder, the causal work is done by the moving particles. Secondary qualities are blamed mainly for leading us into an erroneous understanding of the world and thus as something to be overcome scientifically. But what if these qualities actually have a positive role? What if it turns out that seeing snow as white and feeling it as cold is vital for us?

This paper will show that Locke takes secondary qualities to be indispensable. Their indispensability, I submit, is owing to a teleological framework according to which they are suited to our needs and purposes. In other words, secondary qualities provide us with a familiar life-world that is fundamental for our interaction with things and one another. Just try to imagine a world without smells, colors, or sounds! If we think of ourselves as links in the world's causal chains, something crucial would be lacking if we were not able to distinguish things and interact with them as we do.

If the teleological reading is correct, the common way of approaching secondary qualities in Locke is not necessarily mistaken, but it is at least insufficient. Commentators have concentrated on the criteria for the distinction between primary and secondary qualities in natural philosophy. They have seen early modern debates as mainly between two camps, according to which secondary qualities are either objective or subjective. Galileo and Descartes, for instance, are often taken as subjectivists, whereas Boyle and Locke count as objectivists who see secondary qualities as dispositions in objects.<sup>2</sup> While building on this work, I confine myself to explicating Locke's nonreductive view of secondary qualities. But in contrast to the common objectivist reading, I think that Locke's reasons for defending his view are different from the usual account and lie in the teleological design of the world.

I will present the teleological reading in the following steps: I begin by asking how teleology and secondary qualities hang together. I then turn to Locke's teleological framework in the *Essay* in order to see how it affects the role of secondary qualities. In fact, a crucial function of these qualities is to guide our actions. However, even if secondary qualities have this function, one might ask why primary qualities can't do the job even better. In view of this question, I next examine Locke's arguments in detail: since

secondary qualities must account for cross-purposes and for reliance on different kinds of beings, they will be shown to provide crucial ingredients of our life-world that make for a suitable and shared environment. Although the term "life-world" was Husserl's, I do not ascribe Husserl's views to Locke. I will argue, nevertheless, that Locke's account suggests that there is more to secondary qualities than merely providing a special set of irreducible properties. I conclude by discussing the relation between primary and secondary qualities in light of my teleological reading.

### 1. ARE SECONDARY QUALITIES EXPLANATORILY IRRELEVANT?

According to many commentators, one of the most pressing problems in the study of early modern philosophy is to find a clear justification of the distinction between primary and secondary qualities.<sup>3</sup> But why is this distinction so significant? One of the main attractions is to single out primary qualities as the protagonists in proper mechanistic explanations. If secondary qualities such as tastes, sounds, or colors merely populate our mental lives, whereas primary qualities such as size, shape, or motion are actually involved in the causal interactions of our universe, then natural philosophers were right to favor primary qualities. With this in mind, Laurence Nolan gives a helpful illustration, noting that "the color" of a clock "or the sound that it makes when it chimes on the hour are irrelevant to understanding how it keeps time and thus do not figure in such explanations."<sup>4</sup>

The insistence on efficient causation through primary qualities in physical explanations, then, makes secondary qualities seem irrelevant for such explanations. At the same time, there is a striking connection between the explanatory irrelevance of secondary qualities and the supposed explanatory irrelevance of teleology. Teleological explanations typically account for things or their features by specifying a *function* or purpose: eyes, for example, are taken to be for the purpose of seeing. Now, purposes are often construed as *cognitive* items—intentions in agents or in God's design: on a teleological account, eyes don't merely see: they are designed or intended for that purpose.<sup>5</sup> Likewise, secondary qualities are not properties of things but are taken as effects on the perceiver: unlike the size or shape of a flower, its color or smell are nothing but effects on my cognitive system. If we follow Galileo, for instance, and imagine a world without cognizing minds, this world would be devoid of final causes and secondary qualities alike, but the mechanisms that keep it going would still work.<sup>6</sup> In such a world, neither final causes nor secondary qualities help explain the world's causal efficacy.

However, while similar objections to final causes and secondary qualities only suggest that assuming them will be met with similar arguments,

there is also reason to suspect a deeper and positive connection between teleology and secondary qualities, especially because secondary qualities are seen as enormously *useful*. Descartes, for instance, readily admits that their perception crucially aids our self-preservation. Despite some notable exceptions, however, this issue has had little scrutiny.<sup>7</sup> But as we have already seen, Descartes does not dismiss final causes *tout court*; what he dismisses is the assumption that we can deduce physical explanations from speculation about God's ends. A similar line of argument applies to secondary qualities: while we shouldn't take them as evidence about things in the world, they are crucial for guiding us toward behavior that ensures our survival. And this guiding function of secondary qualities might make them teleological after all.

The locus classicus in Descartes for teleology in sensation and secondary qualities is the Sixth Meditation. Focusing on this text, Alison Simmons has argued that Descartes's account of secondary qualities is much more than a kind of error theory. Indeed, sensory cognition of secondary qualities tracks what is biologically beneficial or harmful for a person. What is important for our purposes is that Descartes does not object to ascribing natural functions or ends to things or processes in conjunction with efficient causal explanation.<sup>8</sup> If this is correct, then secondary qualities help determine whether an agent behaves in one way or another. Thus, reducing secondary to primary qualities would deprive us of an important explanatory device. With these more general considerations in place, we are now in a position to consider Locke's case.

## 2. THE FUNCTION OF SECONDARY QUALITIES

Although Locke famously introduces the distinction between primary and secondary qualities in chapter 8 of the second book of the *Essay*, the exact location of the argument for the distinction is a matter of ongoing controversy.<sup>9</sup> Rather than going into this controversy, I will focus on the *role* of secondary qualities. Locke defines them as “[p]owers to produce various sensations in us by their *primary Qualities*” (*Essay* II, viii, 10:135). In our ordinary perceptions, we encounter ideas of secondary qualities as familiar properties of things or, technically speaking, qualities of substances. It is no surprise, then, that Locke returns to the topic of qualities in chapter 23 of the second book, where he discusses ideas of substances. He begins by reminding us that powers, and especially secondary qualities, play a crucial role for us, since “secondary Qualities are those, which in most of them serve principally to distinguish Substances one from another” (II, 23, 8). Having thus commented on the function of qualities, Locke inserts what I would call a *teleological*

*digression* on the relation between primary and secondary qualities (§11 to 13), refining his view in three steps:

- first, he argues that the ideas of secondary qualities present in our experience would disappear if we had highly sharpened senses (§11);
- second, he explains that God has designed our senses in accordance with our purposes and needs (§12);
- third, he conjectures that, while angels or spirits might enjoy fascinating insights into primary qualities, our own cognitive limitations are suited to the human condition (§13).

The reasoning in the digression seems to be roughly this: if God has designed our senses in line with our needs, why has he not given us sharper senses? Answer: our senses are good enough. More fine-grained cognitive systems would not be suited to our human nature, though they might be suitable for angels or other animals. Now, this digression does more than account for the function of secondary qualities in relation to the useful ideas they provide for us. The digression is firmly rooted in the teleological and methodological concerns of the *Essay* as a whole, as they are stated in the introduction (I, i). There Locke explains that the limits on human knowledge are generally results of human purposes and should constrain our epistemological expectations.

Locke's discussion of secondary qualities should be seen, then, in the context of the *Essay's* general aims and premises, whose framework is unfailingly teleological: namely, that our "[b]usiness here is not to know all things, but those which concern our conduct" (I, i, 6:46). Accordingly, the limitations of our knowledge are justified by the ends of our knowledge. As is well known, Locke's *Essay* aims at exploring the "origin, certainty and extent of human knowledge." But well before he sets out the details of his theory of ideas in order to accomplish these aims, he makes this statement to justify our cognitive limitations. What is the point of this justification? Locke defends an essence agnosticism that leaves the real essences unknowable.<sup>10</sup> As he makes clear throughout the *Essay*, he thinks that our knowledge extends no farther than our ideas. Originating in our experience, these ideas do not represent real essences of things but clusters of properties, that is, the primary and secondary qualities that cause our ideas. This means that we can't hope to attain anything like perfect knowledge of the world. However, this is not a problem since it is not "our business" in the first place.

Now, we could conclude that what we can know is sufficient for conducting our lives on earth. But Locke's point is not merely that our cognitive capacities are sufficient or useful; rather, they are *suited*

to all our purposes, on the one hand, and to the pertinent things, on the other hand. This teleological triangle of cognitive faculties, purposes, and things constitutes a normative constraint on our cognitive endeavors in that we should not attempt to go beyond the set limits. Locke writes, “The Candle, that is set up in us, shines bright enough for all our purposes. . . . And we shall then use our Understandings right, when we entertain all Objects in that Way and Proportion, that they are suited to our Faculties” (I, i, 5:46). Accordingly, he spells out his project as wanting to take “a Survey of our own Understandings, examine our own Powers, and see to what Things they were adapted” (I, i, 7:47). As I will clarify later, Locke does not merely claim that our faculties suffice; rather, he defends a much stronger teleological thesis, according to which we manage to live our lives *not in spite of but because of* our cognitive limitations.

Our perception of secondary qualities is a special instance of this teleological tuning since ideas of secondary qualities, in particular, help us distinguish things and thus get around in the world. Like Descartes, Locke stresses the suitability of secondary qualities for our human endeavors. In the *Essay*, the relation between secondary qualities and human senses is couched in terms of a healthy *fit*. In view of the teleological framework sketched above, it is not surprising that we find Locke talking about all the involved relata—the qualities, our sense organs, and our purposes—as designed to suit one another.

Let’s look at the definition of secondary qualities: these are such “*Qualities*, which in truth are nothing in the Objects themselves, but Powers to produce various sensations in us by their *primary Qualities*” (II, viii, 10:135). So what we call colors, sounds, smells, or tastes are mere powers or, as we might say today, dispositions. But the only defining characteristic of these powers is their *function*.<sup>11</sup> Thus, these powers have a certain job; they are powers *to produce* various sensations *in us*.<sup>12</sup>

At the receiving end of the fitting relation are our senses, which are designed to operate with the ideas produced. These operations, in turn, are attuned to our purposes. As is clear from the passages cited above, these purposes lie in enabling us to live our lives and cognize things in view of that end, rather than attain perfect knowledge. Accordingly, Locke writes,

The infinite wise Contriver of us, and all things about us, hath fitted our Senses, Faculties, and Organs, to the Convenience of Life, and the Business we have to do here. We are able, by our Senses, to know, and distinguish things; and to examine them so far, as to apply them to our Uses, and several ways to accommodate the Exigences of Life. (II, xxiii, 12:302)

This teleological trio of purposes, secondary qualities, and ideas is supposed to explain the makeup of our complex ideas, which are geared toward making pertinent distinctions, rather than “carving nature at its joints.” At the same time, it is clear that the implied usefulness is not seen as a lucky coincidence but as a result of design.

Yet the assumption that relations among purposes, secondary qualities, and ideas are owing to divine design might raise concerns about the precise role of secondary qualities. Is the function of qualities really owing to their properties, or does it ultimately depend on features of God’s willed design that might be superadded to qualities?<sup>13</sup> As we will see shortly, Locke assumes that the guidance offered to us by ideas of secondary qualities does depend on further features—especially on the conjunction of these ideas with those of pleasure and pain. In this sense, teleological purposes depend on something other than the secondary qualities themselves. However, this does not prevent secondary qualities from having the function of producing ideas. In this sense, secondary qualities can be seen as distal causes of the distinctive life-world provided by ideas of secondary qualities. As already noted, when Locke introduces the pertinent fitting relation between secondary qualities and our senses, he points out that we are not “to wonder that Powers make a great part of our complex ideas of substances; since their secondary qualities are those, which in most of them serve principally to distinguish Substances from one another” (II, xxiii, 8).

But we might ask again whether even the *production* of such ideas, and the distinctions they allow for, is not a consequence of further factors superadded to secondary qualities. I don’t think so. Of course, the distinction between different kinds of substances does not, as such, make these substances good or bad for us. Accordingly, teleological purposes are not an inherent feature that could be “read off” the qualities. The distinction between red or green tomatoes does not make them good or tasty. Nevertheless, it is *distinguishability* in virtue of secondary qualities that allows us to recognize differences that are, in turn, relevant for how we live. Indeed, Locke points out adamantly that objects produce ideas “by established Laws, and Ways” and that God has set such ideas “as Marks of Distinction in Things” (see II, xxx, 14). Hence, while teleological purposes are indeed embedded in a more complex setup that involves qualities alongside further features of divine design, secondary qualities have their own crucial role to play in producing the ideas that help us make pertinent distinctions.

These and other considerations make it abundantly clear that Locke takes secondary qualities to be rooted in functions related to our biological and cognitive needs. Qualities and ideas are fitted accordingly: the



crucial characteristic these qualities have is their job of producing ideas in us that allow our senses to govern distinctions relevant to our lives. Thus, although the teleological role of secondary qualities depends on further factors of divine design, Locke seems to think of this quality/idea/purpose match as anthropologically basic.

A crucial question, of course, is what our purposes and needs actually are. Locke makes it clear in the *Essay* that our preservation in this life—along with moral duties and some knowledge of God—is crucial. In fact, Locke could be seen as providing a general “epistemological theodicy” to justify the limits on our cognitive capacities (see IV, xiv, 2). For the fitting relation between senses and qualities, this means that we “cannot attain perfect knowledge”; rather, God “hath fitted us for the neighborhood of the bodies that surround us, and we have to do with” (II, xxiii, 13:302). So a person’s senses would be unfit if he were not able to “see things he was to avoid at a convenient distance, nor distinguish things he had to do with, by those sensible qualities others do” (II, xxiii, 13:302). Thus, it is vital that we recognize the things around us on the pertinent medium-sized scale.

To be sure, just the provision of a scale pertinent to the human body is not sufficient for guidance. We must be able to recognize and distinguish things that are *relevant* for our purposes. To this end, our sensations are taken to be coupled with pleasure and pain. If they weren’t, Locke says, we would have “no reason to prefer one Thought or Action, to another” (II, vii, 3). Paired up with pleasure and pain, then, our ideas of secondary qualities are geared toward closely steering our actions and further thoughts. This close coupling allows us to recognize “from a convenient distance” the things we had better avoid. It makes a difference whether I just see a “geometrical shape of two meters length” in front of me or a “hole that I could fall into if I move on.” It also matters whether what I have on my plate is a fascinating texture or a piece of moldy bread. Coupled with pleasure and pain, ideas of secondary qualities allow for detecting the latter.<sup>14</sup> We might conclude, then, that Locke’s teleological framework provides an explanation of secondary qualities with regard to how they can guide our actions and thoughts.

As has been noted, Locke was not the first author to link secondary qualities to our needs and purposes. While Descartes’s Sixth Meditation might have served as a general inspiration, Locke’s teleological digression may have been modeled more closely on Malebranche’s position. As Simmons (2003) has noticed, Malebranche construes sensation as clearly action-guiding and self-preserving. According to Malebranche, our eyes, for example, are not given to us for discovering geometrical knowledge; rather, they “are given to us simply to keep watch on move-

ments of our bodies in relation to other bodies surrounding us and for the convenience and the preservation of life.”<sup>15</sup> Locke could thus build his view of sensation on Malebranche's line of reasoning.

The emerging picture suggests an understanding of sensation that might remind us of James Gibson's theory of affordances. Affordances, says Gibson, are what the environment “*offers* to the animal, what it *provides* or *furnishes*, either for good or ill.”<sup>16</sup> Such a comparison has clear limitations, of course, but one could say that Locke's ideas of secondary qualities are those ingredients of complex ideas that turn substances and other things into the kinds of things that *we can handle*. Were it not for secondary qualities, in other words, we couldn't interact with our environment. In this sense, at least, secondary qualities are not causally idle. Now let us look at some details of Locke's position.

### 3. STEPS TOWARDS A LIFE-WORLD

While the supposed function of secondary qualities seems to cohere with the teleological framework, it also raises some critical questions. In contrast to ideas of secondary qualities, those of primary qualities are conducive to a truthful understanding of nature since only they resemble real properties of things. Even if ideas of secondary qualities can help us along, why can't ideas of primary qualities do this job better? After all, a more truthful understanding of the world seems not to do any harm. As I see it, Locke would reply to such questions by urging that secondary qualities provide us with a suitable environment *for us*, something that modern philosophers, after Husserl, would call a *life-world*, that is, the phenomenal space attuned to the perceptual scale of humans, as opposed to the natural world as investigated by scientists.<sup>17</sup> In our life-world, we see fellow humans, not arrays of atoms. We are not particles in motion but sitters on chairs, and so forth. Locke's position might be examined most succinctly in view of the following two objections.

#### Objection from Eliminativism

According to the *objection from eliminativism*, we can read Locke's dispositionalism about secondary qualities as boiling down to a form of eliminativism. To our senses, of course, objects *appear* to be red or smelly, but, in fact, they are not. What really matters in our quest for knowledge are primary qualities. According to some commentators, Locke himself can be seen as defending a version of eliminativism.<sup>18</sup> After all, he points out that it is because “our senses” are “failing us in the discovery” of primary qualities that “we are fain to make use of their secondary Qualities” (II, xxiii, 8:300). While it might be convenient to think that there are ordinary objects with colors and other familiar properties, what we

see boils down to an array of moving particles. And if we want to understand how things hang together, we had better acknowledge that the causal work is done by primary qualities. On this reading, insisting on secondary qualities is misleading. In fact, Locke himself could be seen as defending a kind of error theory, according to which our beliefs about objects as being colored, for example, are systematically false.

In reply to this line of objection, we should begin by noting that Locke does not seem to think of secondary qualities as leading us into error. On the contrary, we have already seen that Locke, despite his talk of our “senses failing us,” stresses more than once that our cognitive capacities are suited to “our present Condition.” This goes hand in hand with his general point that our cognitive limits are not owing to a deficiency but should be taken as the result of a teleological calibration. Then how can we reconcile these assertions with the assumption that our senses “fail us”? It is crucial to see that Locke does not decry the shortcomings of our cognitive faculties. He explicitly states that our senses only “fail us” with regard to certain “discoveries,” namely, those of primary qualities. Thus, he wants to stress that our senses are calibrated to cognizing the world *in a certain way*—a way, as he keeps saying, that is *useful* for us. The upshot is that our cognitive limits are, in fact, owing to a teleological tuning of qualities, senses, and human purposes. Locke’s point, then, is that we should expect to find useful knowledge within the confines of our cognitive apparatus rather than in speculations that carry us beyond.

But one might still want to argue that teleological tuning does not *ipso facto* speak against a more truthful fine-tuning. In other words, even if our cognition is limited, a bit of extra knowledge about primary qualities wouldn’t hurt. So why don’t our faculties allow for some improvement? The answer is that our faculties must be designed to accommodate for *cross-purposes*: scientific knowledge makes up just a tiny part of human purposes; we also need to live and nourish ourselves. Thus, Locke writes that

*the certainty of Things existing in rerum Naturâ, when we have the testimony of our Senses for it, is not only as great as our frame can attain to, but as our Condition needs. For our Faculties being suited not to the full extent of Being, nor to a perfect, clear, comprehensive Knowledge of Things free from all doubt and scruple; but to the preservation of us, in whom they are; and accommodated to the use of Life. (IV, xi, 8:634)*

Locke’s point, then, is that we human beings are not calibrated for one single purpose; rather, this calibration must help satisfy quite different needs. Acquiring knowledge about the natural world is just one end among many. What is more, insistence on improving our knowledge can

run counter to other purposes (IV, xiv, 1:652). And even if the acquisition of knowledge would not take too long, improved sense organs and abilities would hinder us in meeting our daily needs: "If our Sense of Hearing were but 1000 times quicker than it is, how would a perpetual noise distract us" (II, xxiii, 12).

In addition to the emphasis on cross-purposes, Locke's argument from calibration also suggests that the purposes and needs that our senses are designed to accommodate are *specific* with regard to human nature. Had we different cognitive abilities, calibrated toward different levels of knowledge, not only would they belong to a different kind of being, but the world as then perceived would have to be different as well. Discussing animals with different cognitive abilities, Locke writes that "the quickness and variety of sensation" is "sufficient for, and wisely adapted to, the state and condition of that sort of Animals who are thus made" (II, 9, 12–15). He thus seems to endorse the idea that different kinds of beings, although they share one natural world, experience a different kind of surface or layout of the world that accommodates the various cross-purposes of those beings. In sum, we can live *our* lives not despite but *because of* our cognitive limits.

### The Zoom Objection

Although Locke's answer may counter the objection from eliminativism in that the purpose-driven idea/quality calibration makes secondary qualities indispensable, one might immediately raise a second objection. The responses just given show that we need secondary qualities, but they do not prevent knowledge about primary qualities from improving our situation even more, making them suitable for our crossed purposes. As Locke knew very well, we *can* attain such knowledge even in our present condition with the help of instruments that enhance our senses. Let's call this the *zoom objection*.

We might zoom in at the level of primary qualities with the help of a microscope. We might imagine starting out from a familiar impression of, say, a red patch and then zooming in with a microscope to investigate the microstructure of the quality that causes this impression. Then we might zoom out to the red patch, assuming that this is indeed the effect of the microstructure. This would mean zooming both in and out with a microscope—*extending the restrictions* on our senses while also enlarging our knowledge *in keeping with the purposes that these restrictions were designed to foster*. This, in turn, suggests that such an enhancement of our senses would be in line with our purposes after all.<sup>19</sup> For, although Locke denies that we can have cognitive access to real essences, the question remains whether refined access to microstructures might improve our knowledge of things.

But Locke's teleological approach can provide an answer to this charge too. His general point is that, by zooming in, we do not really learn something about the kinds of things we normally deal with; instead, we change the subject and encounter an environment that remains largely alien to the world we normally live in. Locke gives the following counterfactual argument:

Had we Senses acute enough to discern the minute particles of Bodies, and the real Constitution on which their sensible Qualities depend, I doubt not but they would produce quite different *Ideas* in us; and that which is now the yellow Color of Gold, would then disappear, and instead of it we should see an admirable Texture of parts of a certain Size and Figure. This Microscopes plainly discover to us: for what to our naked Eyes produces a certain Color, is by thus augmenting the acuteness of our Senses, discovered to be quite a different thing; and the thus altering, as it were, the proportion of the Bulk of the minute parts of a colored Object to our usual Sight, produces different *Ideas*, from what it did before. (II, xxiii, 11:301)

According to this passage, an enhancement of our senses would produce entirely different ideas in us. Using the example of microscopic enhancement, Locke argues that something under observation is not seen in a clearer or more fine-grained way; rather, it turns out to be a different thing. Instead of the familiar secondary qualities such as colors, we would mainly see primary qualities such as the texture. Thus, we would be dealing with *incongruent* objects. Instead of a piece of moldy bread, I would just see a fascinating texture. Hence, it seems that, in zooming in, we would lose track of the relation between primary and secondary qualities.

But why would that be the case? Locke's counterargument runs on a contrast of unavailable microstructure to available surface structure. While he goes along with the fairly common metaphysical claim that things have a microstructure or real constitution on which the sensible qualities *depend*, he denies that this dependence allows us to reason from the surface to the microstructure. However, now Locke's opponents might be hopeful, since microscopes promise access to the microstructure. But if we grant that they produce different kinds of ideas and that ideas exhaust the scope of knowledge, it follows that we are dealing with different kinds of objects. Apart from the fact that such objects might not contribute to *our* purposes and thus might be better suited to the condition of angels, it raises a question about whether we are actually dealing with the *same object* when looking at something through our eyes and then, once more, through the microscope. Now our opponent might remind us of the dependence claim. If Locke grants dependence between surface and microstructure, he should also grant that the objects

in question are the same. But Locke would have good reason to reject this line of reasoning. After all, the assumed metaphysical dependence does not grant that we are able to *discover* the dependence.

Now one might object that, in this case, the dependence claim is moot. But that objection doesn't go through either. To block the move from dependence to its discovery, we just have to imagine that the same surface might be realized by multiple sets of microstructural arrays or vice versa. And Locke does indeed block such a move, by claiming that we cannot know whether certain relations between primary and secondary qualities obtain *necessarily*. Spelling out this problem of necessity, Locke writes this:

In vain therefore shall we endeavor to discover by our *Ideas*, (the only true way of certain and universal Knowledge,) what other *Ideas* are to be found constantly joined with that of our complex *Idea* of any Substance: since we neither know the real Constitution of the minute Parts, on which their Qualities do depend; nor, did we know them, could we discover any necessary *connexion* between them and any of the *secondary Qualities*: which is necessary to be done, before we can certainly know their *necessary co-existence*. So that let our complex *Idea* of any Species of Substances be what it will, we can hardly, from the simple *Ideas* contained in it, certainly determine the *necessary co-existence* of any other Quality whatsoever. (IV, iii, 14:546)

According to Locke, then, not even knowledge of real constitutions could remedy this problem. Zooming in via a microscope would present us with a *different face* of the world. But given our cognitive limitations, there would be no way of *relating* primary qualities to secondary qualities. Accordingly, a man with "microscopical eyes"<sup>20</sup> would, as Locke puts it, "probably get ideas of (the) internal constitutions: But then he would be in a quite a different world from other people: nothing would appear the same to him and others" (II, xxiii, 12). At this point, one might still object that such cognitive limitations could be overcome eventually. After all, our scientific knowledge and technology have advanced considerably. So is Locke merely arguing from ignorance? I don't think so. Locke's insistence on the problem of necessity is grounded in his agnosticism about real essences, which he famously distinguishes from nominal essences. Knowing necessary connections between qualities would require knowledge about essences governing such connections. But we cannot attain such knowledge. However, the reason for our ignorance is not merely that our abilities or techniques are currently insufficient. According to Locke, the reason is that nothing in nature would "tell" whether some connection is necessary. The problem lies in the sheer abundance of properties and connections that might be observed. If nature doesn't tell, how can we single some of these out as essential? For all we know,

every connection or none might be essential. Now the point is that, if we identify some connection as essential, we do so in virtue of our makeup and interests. In other words, even if there are real essences, any attempt at grasping them is willy-nilly governed by interests and yields nominal essences.<sup>21</sup> Thus, Locke's reply to the zoom objection ties in with his essence agnosticism.

### Ingredients of the Life-World

Now what do Locke's answers amount to? In contrasting the man with "microscopical eyes" with the "rest of men," Locke not only clarifies the role he attributes to secondary qualities, but he also introduces a special use of the term "world" when saying that someone with microscopical eyes or an angel would be "in quite a different world." I have already alluded to this use by pointing out that sensation might be relative to a species of higher or lower animals and thus provide a different surface for different animals and angels. Thus, agents with different senses might share what we could call the same *natural world* in that this world is made up of the same physical components, even though the agents perceive different appearances. So far, however, this discussion might be seen as compatible with the mere assumption that agents with different senses mainly *perceive things differently*. But Locke remarks that the "appearance and outward scheme of things would have quite another face to us" next to the talk of being "in a quite different world," so that "nothing would appear the same to him and others." This suggests not only that differently equipped agents will see a fascinating texture where you and I see a slice of moldy bread. It might mean that we live in wholly different worlds or environments that supervene on the same set of primary qualities.

What is at stake here philosophically? Locke does not draw a clear distinction between merely *perceiving things differently* and *inhabiting different worlds*. Nevertheless, the teleological digression makes the case for such a distinction. Therefore, it is worthwhile to reflect on its significance. I think that Locke is indeed not merely talking about different ways of perceiving things but about different environments or life-worlds. Such life-worlds, when located in the same natural world, are phenomenologically different. Compare: although someone born blind would have sensations different from those of someone with good vision, we would not say that someone blind inhabits a categorically different environment or world. By contrast, it makes sense to assume that other species with different or no bodies, such as cats or angels, inhabit a "different world," even if the difference is still a matter of degree. While we should be careful not to read too much into Locke's text, it is important to see to what degree his discussion might entail the

assumption of a life-world, a world given to us prescientifically, mainly through our ideas of secondary qualities. So what are the factors that set a different *world* in the sense of a life-world or environment apart from *things* merely cognized differently?

First and perhaps most important, the different *teleological calibration* would help constitute different kinds of environment. We have to bear in mind that we are not only dealing with a differentiation of physical levels of qualities that pertain to the same objects. Rather, Locke starts from a teleological order according to which qualities are in line with needs and ends. If we start from different needs and ends for different kinds of cognitive agent, we should expect the divine design of sensation to yield *different sufficiently suitable environments* for different species and not just the different sense organs that would result merely in some species coping less well than others in the same world. Given that different aspects of an item would be useful and harmful or relevant to differently equipped agents, we would most likely not count the same items as things. If relevance, usefulness, and other values contribute to how the environment is organized, then we should expect that what counts as a thing in the first place would differ accordingly. As we have seen in discussing the zoom objection, a differently organized "world" would probably not make sense or be meaningful for us. Accordingly, Locke writes that "if eyes so framed, could not view at once the hand (of a clock), and the characters of the hour-plate . . . their owner could not be much benefited by that acuteness; which, whilst it discovered the secret contrivance of the parts of the machine, made him lose its use" (II, xxiii, 12).

Second, Locke is well aware that such a world or environment would *not be subjective* but, given the design of the various sense organs, *shared* by the members of a species. As such, this world would provide grounds for intersubjectivity and entail constraints for language, culture, and the social life. Locke illustrates this succinctly by doubting "whether [someone with microscopical eyes], and the rest of men, could discourse concerning objects of sight, or have any communication about colours" (II, xxiii, 12). At this point, however, one might object that Locke's famous consideration of inverted spectra suggests otherwise (see II, xxxii, 15). In the presence of the same quality, you might see red, while I see green. Locke points out that this doesn't matter as long as we make distinctions of the same sort throughout. If you *consistently* see red while I see green, the difference will go unnoticed. So while it is true that we do not necessarily share the content of our ideas, we normally seem to share the *distinctions* that these ideas afford us. According to Locke, then, establishing communication requires a common phenomenal experience that is, to some extent at



least, granted through a shared set of distinctions. In this respect, it is important to recall that secondary qualities are not merely subjective, as was often supposed,<sup>22</sup> but powers in objects which, as such, afford distinctions available to everyone with pertinent sense organs. At the same time, however, it is crucial to see that this availability is founded in the teleological design of secondary qualities. As we have seen in the discussion of eliminativism, the natural world, as supposedly given through primary qualities, is not as such a sufficient source for providing a shared world for a species like us humans. Rather, it takes teleological fine-tuning to ground a pertinent environment.

### CONCLUSION

I hope to have shown that the teleological framework is indeed crucial to understanding Locke's account of secondary qualities. Having seen how teleology and secondary qualities might be related in Cartesian and Lockean philosophy more generally, it turned out that secondary qualities are defined by their calibration in relation to ideas and ends. If this reading is correct, Locke can indeed be said to argue for the indispensability of secondary qualities by introducing the idea of a phenomenal world that is teleologically grounded, providing a species-relative environment and a basis for intersubjectivity. On the one hand, then, ideas of secondary qualities can be seen as indispensable in the divine design of the constraints of our experience; on the other hand, they are indispensable in our explanations of thoughts and actions.

But where does that leave primary qualities? Would it be correct to say that secondary qualities provide the life-world, while primary qualities provide the natural world? I don't think so. I would rather argue that both primary and secondary qualities contribute to providing our life-world. As Locke makes abundantly clear, a primary quality like shape is just as indispensable for vital cognitive needs as color.<sup>23</sup> He even calls figure, shape, and color *leading qualities* (and ideas) for our distinction of kinds, claiming that there are "in each sort some leading Qualities" (III, xi, 19:518). With respect to our discussion, the crucial difference between primary and secondary qualities seems to be that, while primary qualities have further characteristics, secondary qualities have the sole function of providing our life-world. This is why Locke defines them as "*Qualities*, which in truth are nothing in the Objects themselves, but Powers to produce various sensations in us" (II, viii, 10:135).

In view of this result, it would be mistaken to think of our life-world as a separate sphere, let alone as ontologically distinct. But although the natural world and the life-world are not distinct in that way, it remains crucial to differentiate between them. Considering the example

of microscopical eyes, one might say that the same things can afford different worlds. Today we are familiar with distinguishing numerous worlds or levels: the physical, biological, social, or political worlds we inhabit seem to be in one place and yet not of the same order. However, as soon as such a differentiation is available, it raises a priority question. Should we explain the life-world in terms of the natural world or vice versa? In light of the interpretation proposed here, attempts to reduce secondary qualities to primary ones might be seen as a way to decide the question in favor of the natural world where the causal work is done. While Locke certainly thought that the natural world is prior in physical explanations, we can see that he restricts the scope of such explanations, making room for explanations of things and of human experience that do not hypostasize either world.

Although Locke is not that explicit about the relation between the natural world and life-world, his discussion of the relation between real and nominal essences clearly lends itself to an answer. While he does not deny the reality and importance of real essences, he decidedly argues that we will always be confined to nominal essences. But this does not keep us cut off in our own world of nominal essences. Rather, Locke might be said to argue that we can learn about nominal essences and rectify them, putting the natural world and the life-world in a dynamic relation. What we learn about the natural world may well influence our life-world and our commonsensical understanding of things. Learning that secondary qualities might supervene on primary ones makes me think differently about the properties of snow. But at the end of the day, Locke would argue that our nominal essences are decisive and underlie the same teleology as secondary qualities.<sup>24, 25</sup>

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## NOTES

1. For instance, see the discussions in Nolan (2011).

2. See, for instance, Perler and Wild (2008, 29–48). However, see Rickless (1997) for strong objections to the common reading of Locke. Durt (2012, esp. 48) distinguishes among four subsets of subjective and objective interpretations and shows that all four interpretations have been attributed to both Descartes and Locke.

3. See, for instance, De Mey and Keinänen (2001).

4. Nolan (2011, 1).

5. This does not, of course, rule out what is called “blind teleology.” See, on different variants of teleology, Shields (2007, esp. 78–90).

6. On Galileo, see Buyse (2015).

7. See Simmons (2001) and Detlefsen (2013).

8. See Simmons (2001).

9. See Allen (2008) for a nuanced discussion.

10. See, on Locke’s essence agnosticism, Lenz (2014).

11. Primary qualities are also introduced as “powers to produce” ideas. But as Bolton (2001, 111) and Jacovides (2017, 186–89) convincingly argue, primary qualities have other characteristics (such as inseparability and resemblance), while secondary qualities have the *sole* function of producing such ideas.

12. I have not seen any discussion of the teleological grounding of secondary qualities, but see Ferguson (2001) for an intriguing teleosemantic interpretation of Locke’s theory of ideas. Compare Stuart (2013, 34–36) for a recent survey of interpretational problems regarding secondary qualities.

13. I am very grateful to an anonymous reviewer for pointing out, among a number of helpful suggestions, this objection, as well as the pertinent paper by Langton (2000).

14. See Shapiro (2010) for a thorough discussion of the relation of sensation to pleasure and pain.

15. Malebranche, *Dialogues on Metaphysics* V, 204.

16. Gibson (1979, 127).

17. See Durt (2012) for an extensive discussion of the qualities distinction and the notion of life-world. According to Husserl, *Crisis*, 138, it is “the spatiotemporal world of things as we experience them in our pre- and extra-scientific life.”

18. See Alexander (1976–77) and Wilson (1992) for a nuanced discussion.

19. See Mackie (1976, 93–101).

20. See Yolton (2004, 74–77) for an instructive discussion of the “microscopical eyes” passage in relation to spirits and animals. Simmons (2003, 424) briefly compares Malebranche’s teleological restrictions to this passage.

21. See, for this kind of objection, for instance, Mackie (1976, 101). Locke discusses the “abundance problem” extensively in *Essay* III, vi:438–71; see esp. III, vi, 5. See for a succinct discussion on Locke’s view on essences Atherton (2007).

22. See Durt (2012, 175), who even calls the supposed subjectivity their “crippling element.”

23. See Shockey (2007) for a phenomenological reading of primary qualities.

24. See Shapiro (2013) for a discussion of the rectification of nominal essences.

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