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Descartes on “What We Call Color”

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1. Introduction

It is well known that Descartes rejects what might be called the Scholastic “Resemblance Thesis,” according to which 1) colors, sounds, odors, tastes, etc. are real qualities of bodies and 2) our perceptions of those qualities resemble them. This Thesis is sometimes stated loosely as “colors, etc. are in bodies in the way that we perceive them.” While it is agreed that Descartes rejects this Thesis, it is generally assumed that he is, as much as the Scholastics, a realist about so-called “secondary qualities.”¹ In other words, it is taken for granted that Descartes treats “colors” as real entities that must be located somewhere in the true ontology. But there is widespread disagreement among commentators about where exactly he locates them.

Legend has it that after banishing secondary qualities from the material universe in order to accommodate his austere, mechanistic conception of matter in terms of extension alone, Descartes sweeps colors into the “dustbin of the mind,” treating them as mere sensations.² But over the past twenty years, English-speaking commentators have been reluctant to attribute this “subjectivist”³ account to him, for a variety of reasons. John Cottingham, for example, thinks that it makes nonsense of our ordinary judgments concerning the properties of objects. If colors are in the mind, then Descartes is committed to such paradoxical-sounding statements as “snow is not white nor fire red.”⁴ In contrast to the subjectivist interpretation, Cottingham holds

¹ Descartes never uses the terms “primary quality” or “secondary quality,” but it is generally agreed that he distinguishes between these two types of quality even if he did not use the terms that Boyle and Locke would later popularize.

² For an extended critique of this standard reading of Descartes, see Nolan and John Whipple (2006).

³ I am using this term in the traditional sense to mean that secondary qualities just are sensations or mind-dependent entities. Contemporary color theorists often prefer to call this view “eliminativism” (or an “error theory”).

⁴ 1990. Although he does not address Cottingham directly, Michael Ayers challenges the assertion that such statements are paradoxical. See chapter 6 in this volume.

that Cartesian colors are in bodies, but just not in the way that we perceive them. Based on an important passage in the *Principles*, he and two other leading commentators have argued that Descartes affirms a dispositionalist account of color that anticipates Locke's famous theory of secondary qualities as mere powers in objects to produce ideas in us.⁵ Other commentators have found yet a third view in Descartes writings, according to which colors are not dispositions but microphysical structures that might be said to underlie them (i.e. color physicalism).⁶

In light of these various interpretations and the texts upon which they are based, one might be inclined to suppose that Descartes affirms several accounts of the ontological status of color. Indeed, Margaret Wilson concludes just that. In a prominent essay, she argues that in various passages throughout the corpus Descartes vacillates between three views just mentioned—subjectivism, dispositionalism, and physicalism.⁷ One problem with this conclusion is that, if true, it would mean that Descartes also contradicts himself, for many of these alleged vacillations occur in single works. But this seems implausible.

A final group of commentators have developed a more charitable line of interpretation that attempts to reconcile Descartes' various remarks about color, or at least to reconcile the putative "objectivist" strand that grants colors an existence in bodies independent from the perceiver and the putative "subjectivist" strand that treats them as sensations, and thus makes them utterly dependent on the perceiver. Margaret Atherton, most notably, has argued that Descartes holds a dualistic account of "color" that bifurcates its nature: there is one kind of color in minds and another kind of color in bodies.⁸ Atherton concedes that as a philosophical position the dualistic view is inherently unsatisfying, inasmuch as it tries to have it both ways. But she argues that it befits Descartes' commitment to mind-body dualism and mind-body interactionism.

In this chapter, I intend to challenge the shared "realist" assumption of all these interpretations. Descartes does not take "colors" to be real entities with distinctive natures: his rejection of the Scholastic view is deeper than it has traditionally been understood. I shall argue that Descartes is a color nominalist: his positive claims are restricted to how we use color *terms* and do not purport to assert any metaphysical theses about the status of secondary qualities. Like the dualist view, the nominalist

⁵ See Nicholas Jolley (1990, 83f) and Stephen Gaukroger (1995, 159–64 and 345–46). Some contemporary color theorists also attribute this view to Descartes. See, e.g., Evan Thompson (1995b, 20).

⁶ See, e.g. Margaret Wilson (1992) and Celia-Wolf Devine (1993, 46).

⁷ 1992, 228 and 234. Focusing just on the scientific writings, Wolf-Devine draws the same conclusion (1993, 48). Unlike Wilson, however, she rightly dismisses the dispositional interpretation of Descartes on color on the ground that it conflicts with his strict mechanism. See my further discussion of this point in section 2. Wilson holds that Descartes is not unique: most of the early modern mechanical philosophers vacillated in the same way (1992, 228). Incidentally, Wilson's general position is not unprecedented; many philosophers have attributed such vacillations to Boyle and Locke, including J. L. Mackie 1976, 15.

⁸ 2004. For a similar view, see Tad Schmaltz (1996, 49–50 and 1995, 391). He argues that, for Descartes, colors can be regarded either as properties in external objects or as sensations in us, and thus that the terms for sensible qualities generally are equivocal. This account is also implicit at times in Cottingham's essay.

interpretation is motivated in part by considerations of charity. It also seeks to explain *all* of the Cartesian texts on this topic rather than favoring one set of texts over another, as for example the dispositionalist and subjectivist readings have tended to do.

In arguing that Descartes is a color nominalist, one of the things that will frame my discussion is a much-neglected expression. In almost every one of the passages in which he is purported by commentators to be asserting a positive metaphysical claim about color, Descartes speaks of “what we call color” (or “what we call red”, etc.). This locution is crucial for understanding his aims in these passages. Typically, when using it, he is referring to the properties of bodies that we ordinarily refer to as “colors.” He is not speaking in his own voice or claiming, in light of philosophical reflection, that we *ought* to call such and such properties “colors.” In short, he is best read as making a semantic point, rather than a metaphysical one, about how the term “color” is used in ordinary discourse. As he sees it, this general term and particular color terms (such as “red,” “blue,” “green,” etc.) serve as placeholders in everyday parlance for whatever it is in bodies that causes our visual sensations.

Once one appreciates the significance and ubiquity of this expression, it becomes clear that passages that have traditionally been read as making metaphysical claims about the nature of color were written with very different purposes. Two such purposes loom large. First, in many of these passages, especially those contained in his scientific writings, Descartes is concerned to defeat the Resemblance Thesis, as characterized above. As a mechanist who aims to show that our sensations can be caused by something entirely different in nature from them, Descartes rejects the Resemblance Thesis and devotes much of his scientific work on perception to arguing against it. Second, Descartes maintains that our sensations can be clearly and distinctly perceived only when we regard them as modes of the mind. Such perceptions become confused and result in error when we judge, as the Scholastic does, that they resemble properties of bodies. In most of the other (non-scientific) passages devoted to “color,” Descartes is concerned to diagnose this error and to explain how to guard against it.

In order to avoid being misunderstood, a defender of nominalism must issue a caveat about how he is going to use language. In the case at hand, one must avoid using color terms in a way that implies any form of realism of the sort that I have claimed Descartes rejects. Descartes has been misinterpreted in part, I believe, because he himself is not always so careful, using color terms in different ways without always indicating explicitly how he is employing them. Allow me to stipulate then that, except in contexts where I expressly say otherwise, I shall use the general term “color” (and particular color terms such as “blue,” “red,” “green,” etc.) to refer to the product of one way of abstracting from our visual sensations. It will be part of my argument that, according to Descartes, such abstractions are confused and involve acts of false judgment, though my defense and elaboration of this point must wait till section 3. I will also sometimes use the term “color” to refer to the views of the color realist; this second

use will be indicated by quote marks. Besides color terms, one must also be wary of the expressions “sensation” and “sense perception.” In contemporary discussions, these terms are often used to refer to qualia, and thus presuppose a subjectivist account of secondary qualities. I do not think Descartes ever intended to use these terms in this sense, for reasons that will become clear in section 3. I shall use these expressions, as I believe Descartes typically does, to mean the perception *of an object*. In a well-known passage from the Third Meditation, Descartes states that all ideas—sensory or otherwise—are *as if* the images of things.⁹ I take this to mean that all cognition, even non-veridical perception, is intentional.

This paper consists of two main parts and is divided according to Descartes’ two purposes in the passages on color, as described above. In the next section, I examine those places in Descartes’ scientific works where he develops a mechanical theory of vision and mounts a direct attack on the Resemblance Thesis. In keeping with my thesis, I argue that that is all he takes himself to be doing in these passages. We shall find him using the locution “what we call color” repeatedly to indicate the nominalist position that, with respect to bodies, “color” is just a name that we ordinarily use to refer to the physical causes of our sensations in the absence of a scientific account of the nature of these causes.¹⁰ Contrary to the dispositionalist and physicalist interpretations, Descartes does not intend to be offering a realist account of color that locates such putative entities in bodies. In section 3, I take up those passages where Descartes diagnoses the source of the Scholastic Resemblance Thesis and explains how to guard against it, so that our visual sensations can be perceived clearly and distinctly. Some of these passages are ones in which Descartes is purported by commentators to affirm a subjectivist account of color. But I argue that in these cases too he uses the term “color” merely as a name, either for the external causes of our visual sensations or, more typically, for the sensations themselves. In this third section, I also analyze Descartes’ account of how much is “given” in sense experience or, in his terminology, “taught by nature.” Many contemporary philosophers take it for granted that “color qualia” are given in sense experience as discrete entities. It is traditionally assumed that Descartes shares this view, indeed, that his philosophy constitutes the *locus classicus* of qualia. But, on the interpretation developed here, Descartes would say that what philosophers call “color qualia” are merely the products of false judgment. This result will uncover the underlying philosophical motivation for his color nominalism.

⁹ AT 7:37, CSM 2:25. References to Descartes’ work are abbreviated as follows: AT: *Oeuvres de Descartes*, 11 vols., revised edition, Charles Adam and Paul Tannery, eds. (Paris: J. Vrin/C.N.R.S. 1964–1976). Passages are cited by volume and page numbers, respectively, separated by a colon. All English translations are based on *The Philosophical Writings of Descartes*, trans. John Cottingham, Robert Stoothoff, Dugald Murdoch, and (for vol. 3) Anthony Kenny (abbreviated as CSM(K)) (Cambridge: Cambridge University Press, 1984), and *Discourse on Method, Optics, Geometry, and Meteorology*, trans. and ed. Olscamp, P. J. (abbreviated as O) (Indianapolis: Bobbs-Merrill, 1965.). Any divergences from these translations are my own.

¹⁰ These may only be occasional causes. I remain neutral in this paper on the debate whether Descartes was an occasionalist concerning body–body or body–mind causation.

2. Descartes' mechanical theory of vision and his polemic against the Resemblance Thesis

I begin with a brief discussion of Descartes' mechanical theory of vision, as he presents it in the *Optics* and the *Meteorology*. Some commentators have argued that in the course of laying out this theory, Descartes makes various metaphysical claims about the nature of "color" itself. But I shall argue that he is exclusively concerned with explaining vision. What have looked to commentators like metaphysical assertions are in fact claims about the external causes of visual perception.

Descartes' account of color vision is closely related to, and even depends on, his account of the perception of light. The following passage from the *Optics* gives one a sense of this relation.

Regarding light and colour . . . we must suppose our soul to be of such a nature that what makes it have the sensation of light is the force of the movements taking place in the regions of the brain where the optic nerve-fibres originate, and what makes it have the sensations of colour is the manner of these movements. (AT 6:130–31, CSM 1:167)

This passage provides a rough sketch of Descartes' theory of color vision and its relation to his theory of light perception, but the full story is more complicated. What he envisages is a complex causal process in which extremely small particles emitted from a light source are deflected from the surface of an object and impinge on our retina. The motions of these particles are then transmitted to the fibres in our optic nerve, which, in turn, terminate at our pineal gland, where mind–body interaction purportedly occurs. As is well known, Descartes holds that cognition occurs solely in the mind, though he often stresses this point since it deviates from the Scholastic view.

This is Descartes' general account of color and light perception, but he offers more specific details about color vision by focusing on the motions of the particles involved. These particles undergo two different kinds of motion—rectilinear and rotational. The colors we perceive objects as having depend on the relation between these kinds of motion. We see red when the particles' spin (or rotation) greatly exceeds that of their rectilinear motion, yellow when their spin only slightly exceeds the other motion, green when they spin a bit more slowly, and blue when they spin more slowly still (*Meteorology*, AT 6:333, O 337–8).

Part of the goal of Descartes' general theory of optics was to showcase the power of the new mechanistic science to explain natural phenomena and to champion its superiority over Scholastic–Aristotelian accounts.¹¹ The latter assume that perception requires the transmission of intentional forms or species from the external object being perceived to the sense organs of the perceiver, through a medium such as air. Perception takes place because the sense organs of the perceiver receive something

¹¹ See Atherton (1990, 22f) and Wolf-Devine (1993, 1–9).

that is formally identical to what is in the object. In the case of color perception, this means that the “color” we perceive resembles, or even has the same nature as, the “color” in the object itself.¹²

In all of his writings on light and color, Descartes mounts a direct assault on the Resemblance Thesis and takes every opportunity to emphasize the important contrast between the Scholastic view and the mechanical theory of perception that he favors. For example, just after adumbrating the relation between color and light perception in the passage from the *Optics* cited above, Descartes adds: “But in all this there need be no resemblance between the ideas which the soul conceives and the movements which cause these ideas” (AT 6:130–1, CSM 1:167). He then tries to convince us of the falsity of the Resemblance Thesis by citing some of the many examples that eventually became standard among the mechanists. He notes that people struck in the eye seem to see sparks and flashes even if they shut their eyes or if they are in a dark place. Similarly, looking at a bright light can produce after-images with slowly fading colors. These phenomena can be intelligibly explained, he believes, only in mechanical terms. In the first case, the force of the blow sets the optic nerve-fibres in motion just as a bright light would do. In the second case, the optic nerve-fibres have been set in motion with such extraordinary force that it takes longer than usual for them to come to rest (AT 6:131, CSM 1:168). Earlier in the *Optics* he introduces the more famous blind-man analogy: merely by using a stick, a blind man can discern several differences between trees, rocks, water, etc. The implication is that by a similar set of processes involving only motion and resistance, and without any resemblance between the cause in the world and the sensory effects in us, one is able to perceive objects as being red, yellow, green, etc. By considering this analogy, “your mind will be delivered from all those little images flitting through the air, called ‘intentional forms’, which so exercise the imagination of the philosophers” (AT 6:85, CSM 1:153).

In the course of developing his polemic against the Resemblance Thesis, Descartes enlists the locution “what we call” that I mentioned in the Introduction. In the opening paragraphs of both the *Treatise on Light* and the *Optics*, he speaks of what we *call* color and/or of what we *call* light. In the first paragraph of the former, for example, he writes:

The subject I propose to deal with in this treatise is light, and the first point I want to draw to your attention is that there may be a difference between the sensation we have of light (i.e. the idea of light which is formed in our imagination by the mediation of our eyes) and what it is in the objects that produces this sensation within us (i.e. what it is in a flame or the sun that *we call by the name “light”*). For although everyone is commonly convinced that the ideas we have in our mind are wholly similar to the objects from which they proceed, nevertheless I cannot see any reason which assures us that this is so. (AT 11:3, CSM 1:81; emphasis added)

¹² The Scholastics actually held something stronger than resemblance or qualitative similarity. They maintained that there is a formal identity between what is in the object and what is in the mind. See note 17 in Edwin McCann’s chapter in this volume for an excellent discussion of how Descartes and Locke reinterpret the Scholastic notion of formal identity in terms of resemblance.

Descartes draws an important distinction here between our sensations (of light) and what it is in the material world that causes these sensations so as to undermine the Scholastic assumption that there is some resemblance or similarity between cause and effect. He uses the phrase “what . . . we call by the name ‘light’” to refer to this cause, so that we are not misled by language into supposing that there is such a resemblance, or that the light that we perceive (in effect, the light that can be abstracted from our sensation) is actually in objects. The problem is that we ordinarily use the very same term for our sensations as we do to denominate the cause of these sensations in bodies. In later writings, Descartes explains why this is so.

Corresponding to the different ways in which the nerves are moved, or have their normal motion checked, various different sensations are produced in the mind; and this is how the various tactile qualities get their names. <We *call* these qualities hardness, heaviness, heat, humidity and so on, but all that is meant by these terms is that the external bodies possess what is required to bring it about that our nerves excite in the soul the sensations of hardness, heaviness, heat etc.> (AT 8A:318, CSM 1:282; emphasis added)¹³

Descartes is concerned exclusively with tactile qualities in this particular passage, but his main point can be generalized. The mechanical properties of bodies that we call light, color, heat, or hardness, etc. receive their names from the sensations that they causally produce in our mind. Although Descartes does not say this here, the obvious reason why we pick out the external causes of our sensations in this way is that the real nature of these causes is unavailable to us in sense experience. The latter familiarizes us only with the effects of these causes.

This semantic point is crucial for understanding those passages in Descartes’ scientific writings in which he is purported by commentators to endorse a realist account of color. One leading example of this occurs in the opening section of the *Optics*. As noted above, Descartes begins both the *Treatise on Light* and the *Optics* by invoking the “what is called . . .” locution. In the latter, he uses this locution twice, once in the case of light and once in the case of color, in the course of a single paragraph.

I would have you consider the light in bodies we *call* “luminous” [*nomme lumineux*] to be nothing other than a certain movement, or very rapid and lively action, which passes to our eyes through the medium of the air and other transparent bodies, just as the movement or resistance of the bodies encountered by a blind man passes to his hand by means of his stick. . . . Nor will you find it strange that by means of this action we can see all sorts of colours. *You may perhaps even be prepared to believe that in the bodies we call “coloured” [nomme colorés] the colours are nothing other than the various ways in which the bodies receive light and reflect it against our eyes.*

(AT 6:84, CSM 1:153; emphasis added)

¹³ CSM use brackets here and elsewhere to indicate material added in the French translation of Descartes’ original Latin text. Abbé Claude Picot produced the translation, which Descartes enthusiastically endorsed (see AT 9B:1, CSM 1:179).

Some commentators have read the last sentence of this citation as an endorsement of color physicalism, as defined above.¹⁴ But given our previous discussion, we can see why such a reading is misguided. Descartes does not identify “colors” with the mechanical properties of bodies. On the contrary, he identifies what “we call ‘colored’” with those properties. Standard readings of this passage consistently overlook this locution, which is essential for understanding the central point. Descartes is relying, as he had in the *Treatise on Light*, on a distinction between our sensations and the mechanical properties of bodies that cause those sensations so as to combat the Scholastic prejudice that our sensations resemble their causes. Far from making any positive ontological claims about the status of color, he employs the “what-we-call” locution to pick out the external causes of our color sensations in a metaphysically neutral way, for our ordinary way of referring to these causes encourages the Resemblance Thesis.

Descartes refers to “what we call color” several other times in the *Optics* and *Meteorology*. A couple of notable instances of this occur in the former, in a context where we are told how the minute particles that are responsible for light and color perception behave when they interact with different types of surface. Bodies with surfaces that break up the particles that meet them and remove their force “we call black”; other bodies, with highly polished surfaces that cause the particles to be reflected without changing their spin, “we call white.” Descartes notes that there are still other bodies whose surfaces are such that they increase or diminish the spin of the particles that graze them, just as a racquet might do to a tennis ball. Those bodies we call red, yellow, blue, etc. (AT 6:90–2, O 71–3).¹⁵ Once again, he is not making any metaphysical claims about the status of color. In particular, he is not identifying “color” with a reflectance or other micro-structural property of the surface of bodies, as a cursory reading might lead one to suppose. His use of the phrase “what we call” demonstrates that he is merely attempting to identify the mechanical causes of our sensations, in keeping with his scientific program.

To further confirm this interpretation, it is important to note that Descartes uses the “what-we-call” locution in the same way in other contexts. Most notably, in the *Treatise on Light*, he attempts to explain the various observable effects of fire by appealing to motion alone. Whereas Scholastic philosophers imagine a different property for every observable effect of fire, Descartes envisages only one. The violent motion of the fine particles of fire explain how it is able to consume wood and, similarly, how it “produces us with heat and light . . . [I]t is this motion alone which is called [s’appelle] now ‘heat’ and now ‘light,’ according to the different effects it

¹⁴ See e.g. Atherton (2004, 28) and Cottingham (1990, 231–32). Also see Stephen Menn (1995), who draws the same conclusion on the basis of several other passages.

¹⁵ Descartes does not explicitly use the “what-we-call” locution in this final statement but it is implicit given what he says before. This statement anticipates the passage from the *Meteorology*, discussed above, where we are told that the subtle particles produce different color sensations depending on the relation between their rectilinear and rotational motions.

produces” (AT 11:9, CSM 1:84; emphasis added). Here, again, Descartes is making a semantic point about how we pick out the properties of bodies on the basis of the sensations they occasion in us. But what is especially noteworthy is his further claim that in some cases we use different terms to denominate the very same property. The “what-we-call” locution demonstrates that Descartes intends only to be developing a scientific explanation of the observable effects of fire in a way that does not require resemblance (there is nothing in bodies “which is similar to the idea we conceive of heat”).¹⁶ It would strain credulity to suppose that he is offering a reductive metaphysical analysis of the nature of heat and light in terms of the very same mechanical property. The similarity with the passages on color from the *Optics* is obvious.

So far, we have been focusing on Descartes’ early scientific writings. Some commentators claim that he continues to identify colors with properties of bodies in his later writings, especially the *Principles of Philosophy*. Indeed, there is one passage in this work that Cottingham and others cite as definitive evidence that he subscribed to a form of dispositionalism. As we shall see, this reading is mistaken. In the passage in question, Descartes continues to speak of “what we call color” as a way of referring to the mechanical properties of bodies that cause our sensations, without making any positive metaphysical claims about the nature of “color” in the realist’s sense.

The passage in question appears at the very end of the *Principles* 4, within a series of twelve articles (188–199) in which Descartes once again develops a mechanical theory of sense perception, but in a much more compressed manner than he had in his earlier works. In the first of these articles, he reveals that he had originally intended to extend the *Principles*, with a fifth part on living things and a sixth part on man. But he confesses to being unclear about some of this other material. So to avoid delaying the publication of the first four parts, he appends to part 4 this short series of articles, which he intends to fill in the gaps of what he would have written, had he more time. In the first of these articles, he acknowledges that he owes the reader an explanation of (the sensations of) colors, smells, sounds, and the like. The explanation that follows is not an ontological account of sensible qualities, but a scientific account of how external objects produce sensations in our mind by transmitting motions to the various nerve endings in our body. Several sections are devoted to the internal senses and to each of the five external senses, with an emphasis on the different nerves involved in each case. There are references along the way, especially in the case of vision, to the much fuller treatment of these issues in the *Optics* and *Meteorology*. Descartes also sounds a familiar theme by arguing that sense perception does not require resemblance between sensations and their mechanical causes. It is simply in the nature of the mind to perceive various sensations as a result of the motions in our nerves (AT 8A:315–20, CSM 1:279–84). To convince us that causation does not require resemblance, he even cites some of the very same examples as he had in his earlier works—his famous sign analogy, first discussed in

¹⁶ AT 11:10, CSM 1:84.

the *Treatise on Light*; the example of after-images that was discussed in the *Optics*—as well as a new analogy: when a sword strikes our body the ensuing pain resembles neither the motions of the sword nor the motions of the body that is cut (AT 8A:322, CSM 284). As before, Descartes champions the intelligibility of mechanical explanations of sensory phenomena and their superiority over Scholastic explanations in terms of substantial forms and occult qualities. We can understand how the mechanical properties (or the size, shape, and motion) of the corpuscles of one body can produce motion in another body, such as our own. But it is unintelligible how these same properties could produce something different in kind such as forms and real qualities, or how these qualities and forms could produce motions in other bodies, which would be required in order to affect our sense organs (AT 8A:322, CSM 285).

On the heels of this last remark, he concludes

it must certainly be concluded that those things which, in external objects, *we call by the names [nominibus indigitamus]* of light, colour, odour, taste, sound, heat, cold—as well as the other tactile qualities and even what are called “substantial forms”—are, so far as we can see, simply various arrangements [*dispositiones*] in those objects which make them able to set up various kinds of motions in our nerves <which are required to produce all the various sensations in our soul>.

(AT 8A:322–3, emphasis added)

This is the main passage that Cottingham, Stephen Gaukroger, Nicholas Jolley, and others cite as the proof text that Descartes endorses a proto-Lockean view of colors as dispositions or powers to produce sensations in us.¹⁷ The main motivation for this reading is that the Latin term *dispositiones* is transliterated in the authoritative English edition of Descartes' works (CSM) as “dispositions.” But as Celia Wolf-Devine notes, this rendering is misleading, for it suggests our contemporary understanding of dispositions as inherent powers. However, *dispositiones* literally means “arrangement,” as in the spatial arrangement of the parts of bodies, along with their mechanical properties. This is why I have translated it as such here.¹⁸ The larger context of this passage strongly supports this translation as well. Descartes has been arguing for the intelligibility of mechanical explanations of causal interactions between bodies over and against Scholastic explanations. “We can very well understand how the different size, shape and motion of the particles of one body can produce various local motions in another body,” but not how substantial forms and real qualities could produce such changes. Later, in the passage in question, Descartes is best read as referring once again to these particles and their mechanical properties or *dispositiones*.

¹⁷ See references in note 5.

¹⁸ This is also how Rodger Miller and Reese Miller translate it (1991, 282) in their edition of the *Principles*. The term *disposition* in the French edition requires the same reading. Descartes explicitly uses the term *disposition* in this sense in the *Treatise on Light* (AT 11:9, CSM 1:84). Incidentally, Robert Boyle often uses the English word “disposition” to mean arrangement, speaking frequently for example of the “disposition of the parts” of matter. See, e.g. 1979, 20, 30, and 72. As Robert Anstey observes, however, this is not Boyle's only use of the term (2000, 108, notes 4–6).

Given these semantic and contextual considerations, the dispositionalist interpretation of Descartes on color is a non-starter, but one might still be tempted to suppose that he is making an ontological claim in this passage: if colors are not dispositions then they are the arrangements of the size, shape, and motion of the parts of bodies (what Boyle and Locke refer to as “textures”). Here again the suggestion is that he is endorsing color physicalism.¹⁹ But there are features of this passage that indicate decisively that he did not see himself as making any sort of ontological claim about colors, etc. He simply does not intend to be staking out a position on the status of so-called secondary qualities. For one thing, as I argued above, Descartes’ central aim in the larger series of articles in which this passage appears is to offer a mechanical theory of sense perception, in lieu of the complete theory of man that he would have provided had he written Part 6 of the *Principles*. He does not have any metaphysical pretensions concerning the ontological status of secondary qualities in any of the other articles in this series. On the contrary, he is merely concerned with identifying and explaining the causes of our sensations in external objects and in the motions those objects produce in our nerves. Moreover, this particular passage appears in one of two consecutive articles (197–198) in which Descartes attempts to defeat the Scholastic view that our sensations resemble their external causes, as he had in the *Treatise on Light*, the *Optics*, and the *Meteorology*. As before, he speaks in the passage in question of what “we call by the names of light, color, odor, taste, sound, heat, cold” so that we are not misled by language into supposing that there is such a resemblance. Recall that these are the terms that we ordinarily use to pick out the properties of bodies that cause our sensations. Since we are not acquainted with the nature of these properties in experience we use our sensations to denominate them. But now that we have completed the Cartesian scientific program we are in a position to understand that what we have been unwittingly referring to all along are the size, shape, and motion of bodies. So Descartes is best read as providing a proper referent for our ordinary ways of speaking when we refer to colors, sounds, tastes, etc. in bodies. The phrase “what we call” indicates that he is speaking with the vulgar and the Scholastic, and not offering a positive ontological account of so-called secondary qualities. In particular, he is not saying that we *should* call the mechanical properties of bodies by these names. If one needed any further confirmation of this reading, notice that he says “even what are called ‘substantial forms’ . . . are simply various arrangements.” If Descartes were intending to identify secondary qualities with the mechanical properties of bodies then he would be doing the same with substantial forms. But surely he does not think that substantial forms are in bodies in any philosophically interesting sense. On the contrary, he is simply making a semantic point. As with the terms for qualities, the Scholastics use the term “substantial forms” to refer to whatever it is in bodies that enables them to affect other bodies.

¹⁹ Without affirming this reading herself (given her dualist interpretation), Atherton (2004, 29) asserts that the text seems to support it.

But the only things in bodies that could intelligibly serve that role are the size, shape, and motion of their parts. So the Scholastics must (unwittingly) be referring to them.²⁰

The primary aim of this section has been to show that Descartes uses the term “color” in his scientific writings merely as a name for whatever properties in bodies cause our visual sensations, without intending to make any positive metaphysical claims about the nature of “color” as such. This goes a long way toward establishing that he is a color nominalist, and undermining the physical and dispositionalist interpretations. However, in some of the passages that we have considered, especially from the *Optics* and *Meteorology*, Descartes speaks of color as an appearance or as the sensory effect of mechanical causes. This has led some commentators to suppose that he endorses, or at least flirts with, a subjectivist account of color.²¹ In the next section, I confront this interpretation directly and show why Descartes does not accord any status to such putative entities, not even as sensations. I also uncover the motivations for his color nominalism.

3. “Colors” as the products of false judgment

My claim that Descartes is a color nominalist recalls Galileo’s oft-cited remark about the status of sensible qualities from the *Assayer*:

[T]astes, odors, colors, and so on are no more than mere names so far as the object in which we place them is concerned, and . . . reside only in the consciousness. Hence if the living creature were removed, all these qualities would be wiped away and annihilated.

(Stillman Drake 1957, 274; emphasis added)

Galileo is clearly a nominalist about secondary qualities with respect to objects in the physical world. As he says here, insofar as we ascribe them to bodies, tastes, odors, colors, etc. are merely names. But he ultimately appears to be a subjectivist about secondary qualities, inasmuch as he locates them in the consciousness of perceivers. Given the seductive force of the subjectivist reading, one might be tempted to ascribe this limited form of nominalism to Descartes. But I shall argue in this section that he is a more thoroughgoing color nominalist than Galileo. For Descartes, colors, sounds, odors, etc. are merely names, whether ascribed to bodies or to the mind.

To illustrate the view I wish to attribute to Descartes, I would like to begin by considering one way of characterizing some of the phenomenological facts about our sensory experience. What these facts are exactly is controversial, but I take the following description to be one compelling account of them. Suppose one is sitting on

²⁰ The following remark to Regius admits of a similar treatment. “When you discuss colours, I cannot see why you exclude blackness, since the other colours too are only modes. I would simply say: ‘Blackness is commonly counted as a colour, yet is its nothing but a certain arrangement’” (AT 3:372–73, CSMK 3:182–83). Although he does not explicitly use the locution here, Descartes is best read as saying “what are called” colors or blackness . . .

²¹ See e.g. Wolf-Devine (1993, 47).

a beach, feeling the heat of the sun on one's skin, smelling the salty brine of the air, listening to the sound of the waves crashing, hearing the occasional cry of a seagull as it flies overhead, and watching two people toss a red beach ball back and forth, etc. Part of what the example brings out is the complexity of one's experience, which involves multiple sensory modalities (vision, audition, taste, touch, etc.) and complexity within each of those modalities (William James speaks aptly here of a "blooming, buzzing confusion"). One can, of course, draw distinctions within a complex sense perception by abstracting or selectively focusing. Since we are interested in the case of color, suppose one focuses exclusively on the visual elements in this perception. What is it that one sees? (Again, I am interested only in the phenomenological content of the experience.) Even that is highly complex: two sunbathers tossing a beach ball against a background of sea, sand, and sky. Suppose one attends to a single object within this visual scene, such as the red beach ball. Notice that one does not see colors as such. Rather, what one typically sees is a colored *object*—for example, a red beach ball, a yellow umbrella, etc.—with extension and shape. One can of course discriminate the redness of the beach ball from its round shape. One can also discriminate the redness of the beach ball from the blueness of the sky. But the important point is that the ability to make these discriminations does not require one to perceive or imagine redness apart from a shaped object, and fortunately so, for one cannot do that. One might object that one does not always see something shaped. Suppose, for example, one is looking through an ophthalmologist's apparatus and sees only blue. But even in that case one is seeing something extended—a blue color expanse.²² Berkeley recognized that one cannot see or imagine extension apart from color, but the reverse is also true.

With this description of the phenomenology of our color experiences in hand, let us attempt to analyze what it is that the subjectivist means when she says that "colors" are properties of the mind or that "colors" are merely sensations. Using Descartes' favorite locution in this context, one can ask what should be an easy question to answer, but on the description above turns out to be an embarrassing one: what is the subjectivist calling a "color"? As noted above, what one experiences is not color as such, divorced from all geometric properties, but a colored thing with a determinate size and shape (or at least extension). As we have seen, one can abstract from the other sense modalities and attend only to vision. One can abstract further by attending to one object within this field, noticing in the case at hand that it is a red, round ball. Such abstract ways of attending to one's sensory experience are all legitimate. But this last way of abstracting marks the limits of our abilities. There is no sensuous perception of "color" apart from extension and, typically, shape. So what is the subjectivist calling a "color," the complex "redness-roundness"? Presumably not, for one might just as well call that confused complex "shape" or "beach ball." It would seem that what the subjectivist is reaching for with the

²² Even this example might be idealized. Wouldn't one see the eyepiece, one's eyelashes, etc.? Might the brain also generate black spots or something to contrast with the red field?

term “color” is something that cannot be perceived or imagined, something that could only be the product of an illegitimate abstraction—that is, something non-sensuous! The conclusion to be drawn here is that the subjectivist position is unintelligible. The subjectivist could, of course, retreat to the position that all it means to say that “colors are in the mind” is that the sense perception of a colored object is in the mind. That position *is* intelligible, but also trivial and largely uncontroversial in the early modern period.²³ As such, it hardly constitutes an account of the status of so-called secondary qualities.

It might be thought that Berkeley was the first to appreciate that we do not see colors as such, only colored *things*; but in fact, there is at least one place in Descartes’ writings in which he affirms this too. The passage in question (from the *Regulae*) has not received the attention it deserves because it appears in a complex context. As in the scientific writings on vision that we have already examined, Descartes is concerned to defeat the Resemblance Thesis. Contrary to this Thesis, he wants to establish that the external shape of bodies plays a causal role in all sense perception, whether it be of tactile sensations of the shape of a body, tactile sensations of heat and cold, visual sensations of color, etc. All sense perception occurs literally in the same way in which wax takes on an impression from a seal (AT 10:412, CSM 1:40). In this context he writes: “the concept of shape is so simple and common that it is involved in everything perceivable by the senses. For example, whatever you may suppose color to be, you will not deny that it is extended and consequently has shape” (AT 10:413, CSM 1:40–41). The latter sentence might seem to be gesturing at a realist account of the nature of “color,” or at least suggesting that some such account is in the offing. But the context indicates otherwise. As in his scientific writings, what he means by “color” here is “what we call color”—in other words, whatever it is in bodies that causes our sensations. So one should read this sentence as: “whatever you may suppose the corporeal cause of our perception of a colored object to be, you will not deny that it is extended and consequently has shape.” In the citation as a whole he intends to be drawing an analogy: just as the perception of a colored object depends *phenomenologically* on the perception of extension and shape, so likewise the sensation of a colored object depends *causally* on the actual extension and shape of bodies. He is using the phenomenological point that we have been discussing to motivate his mechanistic, anti-Scholastic causal thesis.

Descartes would agree then with the criticism of the subjectivist view developed above. I shall adduce further evidence for this conclusion in this section. Moreover, I shall argue that he would say—and in fact does say in one instance—that treating “redness” (or, in his example, “whiteness”) as a quality involves not only an illegitimate abstraction but also a false judgment. Any attempt to reify so-called secondary qualities in this way meets with the same Cartesian objection. This is ironic because, as noted in

²³ With the exception of Malebranche, who holds that sense perception has both a mental and an ideational component, the latter of which is in God.

the Introduction, legend has it that after banishing secondary qualities from the physical world, and finding no other place to locate them, Descartes sweeps them into the dustbin of the mind. But his criticism of the Scholastic theory of real qualities is deeper than legend would have us believe. He objects not merely to locating “colors” in bodies, but to reifying them in the first place. One only perpetuates the latter mistake by relegating such putative entities to the mind.

I have been characterizing the negative side of Descartes’ nominalism, but as a positive thesis, nominalism is primarily a claim about the meaning of words and how we use language. As we saw in the previous section, Descartes often uses the locution “what we call color” to refer in a metaphysically neutral manner to the properties of bodies that cause our sensations. But in passages where he sees himself as diagnosing the Scholastic mistake of attributing colors to bodies, he sometimes applies this expression to the sensations themselves. He speaks of “what we call the sensation of color” and of “sensations we call color, etc.” The fact that he uses the “what-we-call” locution in this context shows once again that he sees himself as speaking with the vulgar and that we should thus be wary of how we understand these expressions. In particular, the genitive character of the expression “the sensation of color” might tempt us to suppose that colors are objects of perception. But what we call the “sensation of color” is in fact the perception of a colored object, regarded in an abstract manner. We might ordinarily refer to such a perception in this way precisely because we are regarding it abstractly. But we should beware of reifying this abstraction.

In arguing that Descartes is a color nominalist, who refuses to reify colors in any way, part of what I am denying is that he is committed to phenomenal qualia.²⁴ This result is surprising, for in contemporary debates in the philosophy of mind, Descartes’ work is often cited as the *locus classicus* of qualia. But I think this is misguided. It is of course true that all Cartesian thought, sensory or otherwise, has a “phenomenological character,” if we understand this term in the broad sense. Indeed, one might think that phenomenological character is the mark of the mental. But here one must keep in mind that Descartes takes sense perception to be highly confused. The confusion is important because it means that, although our sense experience has a phenomenological character or feel, it does not resolve neatly into discrete qualitative elements that can, in his terms, be clearly and distinctly perceived. Advocates of qualia take them to be “given” in sense experience, but I intend to show in what follows that, on Descartes’ view, most of what we take to be given is in fact the product of false judgments, including what contemporary philosophers call “color qualia.”

In the Sixth Meditation, and at greater detail in the *Principles*, Descartes takes up the issue of how much is given in sense experience. The specific question he focuses on there is not whether color qualia are given, but whether it is given that colors and other

²⁴ De Rosa (2007) denies this too, but for reasons very different from the ones marshaled here.

so-called sensible qualities are properties of bodies. As we shall see, seeing why the latter is not given will shed light on why Descartes thought that color qualia are not given either.

Now, Descartes does not speak of the “given” as such. Instead, he uses the phrase “taught by nature,” where by “nature” he means one’s nature as a mind–body union. This includes “the totality of things bestowed on me by God”—that is, all of my faculties, including my senses (AT 7:82, 80; CSM 2:56). So the question, as he frames it, is whether my nature teaches me that so-called sensible qualities such as color are in bodies. Since not only the Scholastic but also the philosophically benighted person is inclined to attribute such qualities to bodies, one might expect the answer to be yes. One might think that the reason the ordinary person ascribes colors to bodies is precisely because her senses “teach her” that this is so. Is this suggestion correct?

Several commentators have been inclined to think so on the ground that sensations confusedly represent bodies as colored.²⁵ But, in the *Principles*, Descartes states unequivocally: “sensations of tastes, smells, sounds, heat, cold, light, colors, and so on . . . do not represent anything located outside our thought” (AT 8A:35, CSM 1:219). I take this statement to constitute strong evidence that Cartesian sensations do not represent anything non-extensive in bodies.²⁶ Some commentators, however, maintain that Descartes may be saying only that our sensations do not *successfully* represent the properties of bodies.²⁷ On this reading, the passage is consistent with the view that sensations purport to represent bodies as colored, but succeed only in *misrepresenting* them. I submit that if Descartes were committed to this more qualified position, he would have indicated it. But, in fact, what he says in the remainder of this passage, and in the passage from the Sixth Meditation that we have been discussing, rules strongly against this reading. He maintains in both contexts that most of what we ascribe to our senses is the result of false judgments that we formed in early childhood and that now have become so habituated that we forget that we are making them. The judgment that the senses represent bodies as colored is included among these. So the senses do not even purport to represent objects as having colors, sounds, odors, etc.; they are only *judged* to represent in this way.²⁸ I develop this point in what follows by examining both texts at length.

Let us return to the passage from the Sixth Meditation with which we began. Descartes draws an important distinction between things taught by nature, in the sense already described, and things that only *seem* to have been taught by nature.

²⁵ See, e.g. Paul Hoffman (1996), Alison Simmons (1999), and Wilson (1999).

²⁶ I say “non-extensive” here because, as noted in the Introduction, I take Cartesian sensations always to be of an extended object, even if they only confusedly represent extension.

²⁷ Simmons expressed this view to me in conversation. Also see Lisa Downing’s essay in this volume. Downing expresses sympathy for a view like Simmons’, but at one point wonders whether Descartes is committed to the even stronger claim in this passage that sensations are not even as if of objects, something I deny in the my previous note.

²⁸ Here, and in the further discussion that follows, I owe much to Alan Nelson’s work on Descartes’ theory of sensory error (1996).

Among the former class he includes the fact that he has a body and that it is ill when he senses pain and that it needs food or drink when he experiences hunger or thirst. Nature also teaches him that his mind is intimately joined to his body—famously, not as a sailor is present in a ship, but in such a way that they compose one thing. Finally, nature teaches him that there are other bodies in the vicinity of his own, some of which are to be pursued and others avoided. Indeed, when these other bodies produce different sensations in him of colors, sounds, odors, tastes and the like, he is correct to conclude that these bodies possess variations corresponding to—though perhaps not resembling—the sensations themselves (AT 7:80–1, CSM 2:56).

Descartes' remarks here must be understood in light of his teleological account of the senses. The purpose of senses is not to deliver metaphysical truth about the nature of physical objects but to preserve the mind–body union by informing the mind of what is beneficial or harmful (*commoda . . . vel incommoda*) to the body to which it is united (AT 7:83, CSM 2:57). Thus, the only things that are taught by nature are those that serve this function. Descartes wants us to recognize that the teachings of nature are quite modest. Indeed, the list of things just given appears to be exhaustive.²⁹ By contrast, the class of things that only seems to have been taught by nature, but in fact results from “a custom of judging inconsiderately,” is much larger. This class includes the judgment that a space in which there is nothing stimulating one's senses is empty; that stars, towers and other distant objects have the same size and shape that they exhibit to the senses; *and*, apropos our topic, that the very same heat, colors, and tastes that one senses are in bodies (AT 7:82, CSM 2:57).³⁰ Descartes of course takes all of these judgments to be false. He concludes:

My nature, then, teaches me indeed to flee those things that induce a sensation of pain and to pursue those things that induce a sensation of pleasure . . . But it does not appear that this nature teaches us, in addition, that from these sensory perceptions we should conclude anything about the things posited outside us without the prior examination of the intellect, for knowing the truth about these things seems to belong to the mind alone, and not to the composite.

(AT 7:82–3, my translation)

Here Descartes rehearses a theme familiar from earlier meditations, namely that the intellect, not the senses, is the primary source of knowledge. What is importantly new, and almost universally neglected by commentators, is the claim that our senses do not even purport to teach us about the nature of bodies.

Why then do these other things *seem* to be taught by nature, if in fact they are not? Descartes' explanation here, which we shall see further developed in the *Principles*, is

²⁹ Simmons (1999) takes the teachings of nature (or, on her view, the intrinsic representational contents of our sensory ideas) to be much more robust, but I do not think that the texts bear this out.

³⁰ As noted in the Introduction and in the opening paragraphs of this section, one should understand each of the terms “heat,” “colors,” and “tastes” here as referring to the sense perception of an object, where the perception is being regarded abstractly. Descartes should be read as expressing concern that we do not reify these abstractions by supposing, as the Scholastic does, that they reside in bodies.

that we have formed these judgments from our early childhood (*ineunte aetate*) without reason and without any “real or positive propensity.” Once formed, these judgments become so habituated that we no longer realize that we are making them. It is important for him to show that such judgments are voluntary and thus that we are responsible for holding them, for if the senses or the teachings of nature were to blame, then God would be a deceiver. Indeed, this discussion immediately precedes his attempts to develop a theodicy of sensory error analogous to the theodicy of intellectual errors that he had produced in the Fourth Meditation. Descartes concludes the present discussion by noting that we have a tendency to “pervert the order of nature” by using our sense perceptions, which again were given to us for the sole purpose of preserving the mind–body union, as “absolute rules” for discovering the essence of bodies. The senses may teach us that a given body, such as fire, causes heat and pain, but they do not give us any reason to suppose that heat is in the fire, any more than they persuade us that there is something in the fire resembling the pain. “There is simply reason to suppose that there is something in the fire, whatever it may eventually turn out to be, which produces in us the sensations of heat or pain” (AT 7:83).³¹

This last set of points echoes our discussion in the previous section and uncovers the relation between the issues treated there and the present ones. As in his scientific writings, Descartes is concerned to combat the Resemblance Thesis. He does so in this instance by stressing that our senses do not teach us that there is any resemblance between our sensations and the properties of bodies; the implication is that this too is a result of ill-considered judgments. The only thing that nature teaches us in this regard is that there is something in bodies that causes our sensations.³² As we have seen, Descartes uses the locution “what we call colour, etc.” in his scientific writings to refer to this unknown cause in a metaphysically neutral manner. Although he does not invoke it in the Sixth Meditation, the phrase reappears several times in the corresponding section of the *Principles*. This section occurs just before the passage cited above, in which Descartes denies that sensations of color, etc. represent bodies.

It is clear, then, that *when we say* [*cum dicimus*] that we perceive colours in objects, this is really just the same as saying that we perceive something in the objects whose nature we do not know, but which produces in us a certain very clear and vivid sensation which *we call the sensation of colour*. But the way in which we make our judgement can vary very widely. As long as we merely judge that there is in the objects (that is, in the things, whatever they may turn out to be, which are the source of our sensations) something whose nature we do not know, then we avoid error; indeed, we are actually guarding against error, since the recognition that we are ignorant of something

³¹ Cf. Descartes’ claim in his proof of the external world that we have a great (God-given) propensity to believe that bodies cause our sensations (Sixth Meditation, AT 7:79–80, CSM 2:55).

³² It seems unlikely that Descartes is claiming that it is part of the “representational content” of our sensory ideas that they are caused by properties of bodies. In his proof of the existence of body, which appears earlier in the Sixth Meditation, he says that our sensory ideas occur against our will (AT 7:79, CSM 2:55). It is natural to suppose that he is relying again on this claim, which seems to count as one of the teachings of nature.

makes us less liable to make any rash judgement about it. But it is quite different when we suppose that we perceive colours in objects. Of course, we do not really know what it is that *we are calling by the name "colour"* [*nomine coloris appellamus*]; and we cannot find any intelligible resemblance between the colour which we suppose to be in objects and that which we experience in our sensation. But this is something we do not take account of; and, what is more, there are many other features, such as size, shape and number which we clearly perceive to be actually or at least possibly present in objects in a way exactly corresponding to our sensory perception or understanding. And so we easily fall into the error of judging that *what is called colour* [*quod in objectis vocamus colorem*] in objects is something exactly like the colour that we sense; and we make the mistake of believing that we clearly perceive what we do not perceive at all.

(I, 70; AT 8A:34-5; CSM 218; emphasis added)³³

Descartes begins by noting that we sometimes *say* that we perceive colors in bodies. In the language of the Sixth Meditation, we sometimes speak as if this is something taught to us by nature. Taken literally, this is false. But there is another way of understanding this statement depending on the type of judgment that underlies it. For Descartes, truth attaches to judgments in the first instance and to things we say only secondarily. So, before determining the truth of any claim, we must first understand the judgment that grounds it. He aptly titles this section, "There are two ways of making judgments concerning the things that can be perceived by the senses: the first enables us to avoid error, while the second allows us to fall into error." We err, obviously, when we judge that colors are in objects, but we judge soundly if we suppose merely that there is something in bodies that causes our sensations. We judge correctly in the latter case because, as we just learned in the Sixth Meditation, this *is* one of the teachings of nature. The claim that we perceive colors in bodies is unproblematic so long as we understand it in terms of this second form of judgment. This might seem like a peculiar way of speaking, given the meaning Descartes wishes to attach to it: saying that we perceive colors in bodies does not seem to be a claim about the cause of our sensations. But Descartes' rendering seems less unnatural if we recall that the properties of bodies that we term "red," "green," "blue," etc. receive their names from the sensations they causally produce in us. This is why he speaks once again of "what is called colour": the term "colour" serves as a placeholder for these properties of which, prior to doing science, "we are ignorant."

I mentioned earlier that Descartes sometimes applies the "what-we-call" locution not to the causes of our sensations, but to the sensations themselves. The passage above is the main example of this: he speaks in the first sentence of "a clear and vivid sensation which *we call the sensation of colour*." Why does he use this expression in this way? We just noted that the properties of bodies that we term "red," "green," "blue," etc. receive their names from the sensations they causally produce in us. But as I have been stressing throughout this section, we do not have sensations of color as such. Focusing just on the phenomenal character of our experience, we always sense a colored object with extension and—typically—shape. But we may abstract from the spatial properties

³³ I have slightly modified the CSM translation to make it more literal.

presented in such an experience; if we do, we might call this abstraction the “sensation of red,” etc. The expression “sensation of colour” could have another meaning within ordinary language, which again is the idiom in which Descartes is speaking. If we think of “sensing” as a Rylean success verb, then “sensation of colour” means the sensation of a property of bodies that causes that perception. This second way of rendering the locution marks a return to what I said in the previous paragraph. The important point is that, on either rendering of this expression, Descartes is not reifying colors or, in particular, affirming a subjectivist account of secondary qualities.

The first way of understanding the phrase “sensation of colour” provides a resource for parsing two other lines in this passage that are potentially misleading and that might seem to suggest a subjectivist interpretation. Descartes speaks of the “the colour . . . which we experience in our sensation” and “the colour that we sense.” Both of these remarks appear in a context in which Descartes is trying to explain why we ascribe colors to bodies. His explanation presupposes that we are already regarding the sense perception of a colored object abstractly. So what is being called “colour” in these two lines is, again, just this abstraction.

So what is Descartes’ explanation for why we ascribe colors—or what we now understand to be mental abstractions from our sensations—to bodies? In the Sixth Meditation, we learned that we form these and other such judgments in childhood without any rational basis, but at the end of the passage above we are informed for the first time why we are tempted to make them. Descartes’ explanation reinforces the point that they do not derive from the teachings of nature: we clearly and distinctly perceive that various mechanical properties are possible attributes of bodies and mistakenly suppose that there is a similar correspondence between our sensations of color and the properties of bodies that produce them.

In *Principles* I, 71, previously adumbrated, Descartes expands on this account of why we attribute colors to bodies, as part of a more general account of the causes of human error. As before, voluntary judgments formed in childhood, before we were in possession of our reason, are identified as the main culprit. Indeed, the title of this section states that the chief cause of error stems from the “prejudices” of childhood, where the Latin term *praejudicia* literally means to “pre-judge.” But, for the first time, Descartes distinguishes various stages in our childhood development. An appreciation of these stages shows that what we attribute to bodies is more complicated than it would first appear, and that we must distinguish what the vulgar ascribe to bodies (or their surfaces) at various stages and what the Scholastic philosopher ascribes to them. Descartes is not very careful or explicit about the latter, for he is mainly concerned in this section with analyzing how the vulgar go wrong. But such a distinction is implicit in what he says. The Scholastic philosopher’s mistake is rooted in the prejudices or “pre-judgments” of the vulgar, but also goes beyond them.³⁴

³⁴ I am indebted to Alan Nelson for conversations about how to interpret this passage. All misinterpretations are of course my own.

Descartes states that in our very earliest years we distinguished neither our mind from our body, nor this mind-body union from external bodies—that is, me (qua union) from not me. These facts are important, especially the latter, because they show that in this first stage, the mind did not “refer” any of its sensations, including sensations of color, to things outside the union, “but merely felt pain when something harmful was happening to the body and felt pleasure when something beneficial occurred” (AT 8A:35, CSM 1:218). Descartes says that only later in our development, when we learned that we could control our body to pursue agreeable things and flee disagreeable ones, did we distinguish the mind-body union from the external objects that we were pursuing or avoiding. It is during this second stage that we judged that sizes, shapes, motions, etc., as well as tastes, odors, colors, and so on, are in bodies. It is important to appreciate, however, that there is only one set of judgments here, not two. In our childhood, we did not have a clear and distinct idea of body as pure extension and thus did not distinguish size, shape, and extension from other so-called qualities. So what we attributed to objects at this second stage is not “color” as such (as the Scholastic does), but a confused sensory idea that includes extension (e.g. we might attribute red-round-extension to the beach ball).

In the continuation of this passage, Descartes says that, unlike colors, light, tastes, smells, and so on, sizes, shapes, motions, etc. are “presented” (*exhibebantur*) to us in sense experience as things or modes of things. This statement is in keeping with my claim, first enunciated in the Introduction, that our sensations are always as if of extended objects. But here we must be careful. We should not read Descartes as saying that our sensations *distinctly* represent bodies as having mechanical properties for, as was just noted, what we sense is always highly confused. With respect to the representational content of my perceptions, I see things that are shaped and hear things that have locations, etc., but, by its very nature, sense perception does not present us with a pure idea of extension or its modes. However, a confused sensory grasp of extension can sometimes induce a clear and distinct intellectual awareness. On this point, it is helpful to compare the present passage with what Descartes says in the proof of the existence of body just a few sections later, in *Principles* II, 1. There he writes that “we sense, *or rather as a result of being impelled by the senses*, we clearly and distinctly perceive a certain matter which is extended in length, breadth, and depth; the diverse parts of which are endowed with various shapes and subject to diverse movements” (AT 8A:40, CSM 1:223; emphasis added). Descartes is claiming that a confused sense perception of body can (to use the Platonic language of innate ideas) “trigger” or “awaken” a clear and distinct perception of it. But it is only in the latter case that sizes, shapes, motions, and so on are *clearly and distinctly* presented as its modes.

Returning to article 71, Descartes concludes by stressing once again the most important lesson of our broader discussion—namely, that we, not our senses, are to blame for the erroneous metaphysical claims that we make about bodies. The source of these errors are false judgments that we form in childhood. Once formed, they become entrenched and so automatic that we do not realize that we are making them, but

instead conclude (as a second-order judgment) that they are taught by nature or “presented” to us in sense experience.³⁵

[O]ur mind has been filled from earliest childhood with a thousand . . . prejudices; which it subsequently, in youth, did not remember having adopted without sufficient examination but accepted as most true and evident; as if known by perception or imparted to it by nature.

(AT 8A; MM 33)

I have attended carefully to Descartes’ account of what it is that we ordinarily ascribe to bodies because I think it helps to illustrate how he would respond to the claim that colors are mind-dependent properties, apropos the subjectivist interpretation. Colors are not presented to us in sense experience as properties of the mind, any more than they are presented as properties of bodies. Rather, what we call “colors” are merely the products of false judgment. Support for this argument from analogy can be found in a passage from Descartes’ conversation with Burman, the student who interviewed him toward the end of his life. Burman was curious about a remark from the Third Meditation in which Descartes makes a point similar to the one discussed above from *Principles* I, 70, namely that the chief and most common mistake that we make is supposing that our sensory ideas resemble things outside us. So long as we consider these ideas simply as modes of thought and do not refer them to bodies, we avoid error.³⁶ Burman took this to mean that we cannot err about the ideas themselves. But, in his reply, Descartes corrects him:

Even if I do not refer my ideas to anything outside myself, there is still subject-matter for error, since I can make a mistake with regard to the actual nature of the ideas. For example, I may consider the idea of colour, and say that it is a thing or a quality; or I may say that the colour itself, which is represented by this idea, is something of the kind. For example, I may say whiteness is a quality; and even if I do not refer this idea to anything outside myself—even if I do not say or suppose that there is any white thing—I may still make a mistake in the abstract, with regard to whiteness itself and its nature or the idea I have of it.

(AT 5:152, CSMK 3:337)

According to this passage, I can err with respect to (what I call) the sensory idea of a color even if I do not refer this idea to anything outside myself, that is, even if I do not judge that it represents anything in the world. I do this, he suggests, when I judge that whiteness, for example, is a thing or quality. Now, it might be pointed out that although Descartes invites us to consider our sensory ideas without referring them to bodies, he does not specifically say that I err when I judge whiteness to be a quality of the *mind*. But for the purposes of showing that Descartes would reject a subjective account of colors as mind-dependent properties, this is not necessary, for he is best read in this passage as making a general point. If I regard whiteness as a quality or thing of any type, even “in the abstract,” as he says, then I err. In other words, I err if I reify

³⁵ For a further statement of this view, see Descartes’ discussion of the “three grades of sensation” in the Sixth Replies (AT 7:437–38, CSM 2:294–95).

³⁶ AT 7:37, CSM 2:26.

colors in any way, which would include treating them as modes of mind.^{37, 38} Note the important contrast between Descartes' approach to these issues and contemporary discussions of qualia in the philosophy of mind. Friends of qualia take them to be given in experience, whereas for Descartes even the claim that there is a white quale is not something taught by nature, but the product of judgment. As I mentioned at the beginning of this section, however, I do not think that Descartes is denying that sensations (like all thought) have a phenomenological character. What he is denying is that this character can be specified or analyzed into discrete qualitative elements, each having distinctive natures.

We have just seen why Descartes would be opposed, for philosophical reasons, to treating colors as properties of the mind and thus would reject the subjectivist view. But what are we to say about those texts in which he is purported by commentators to endorse such a view? As it turns out, the texts in question raise many of the same issues as we have discussed above. So it will be easy to reinterpret them in light of previous considerations. Given space constraints, we will not be able to discuss them all, but nor will we need to, for they all admit of a similar treatment. I will focus on those that have seemed to commentators to provide the strongest case for subjectivism.

The passage most often cited in favor of this interpretation is *Principles* I, 68, which is part of the same context as articles 70–71, discussed above. In particular, the theme of avoiding error by suspending judgment about whether our sensory ideas resemble anything in the world is at work here too.

In order to distinguish what is clear in this connection from what is obscure, we must be very careful to note that pain and colour and so on are clearly and distinctly perceived when they are regarded merely as sensations or thoughts. But when they are judged to be certain things existing outside our mind, there is no way of understanding what sort of things they are.

(AT 8A:33; CSM 1:217)

It is easy to see how a superficial reading of this passage, taken out of context, seems to support the view that Descartes reduces putative things such as “colors” to sensations or thoughts. But if we read the passage *in context*, a very different interpretation emerges—one that squares with his color nominalism. Article 68 appears at the end of a series of articles devoted largely to Descartes' epistemology of created substances and their properties. This series begins in article 48, where Descartes the dualist claims to recognize “only two ultimate classes of things: first, intellectual or thinking things . . . ; and secondly, material things” (AT 8A:22–3, CSM 1:208–9). Many of the

³⁷ Andrew Pessin has independently developed a similar reading of this passage in an unpublished manuscript. For alternative readings, see Calvin Normore (1986, 226) and Raffaella De Rosa (2007, 197).

³⁸ Some commentators question the reliability of the *Conversation with Burman* since it is a second-hand report of what Descartes actually said. In his illuminating introduction to the translation of this work, Cottingham handily deflects such concerns (1976, xvi). Moreover, in this instance, Descartes' reply to Burman is of a piece with his remarks about the role that judgment plays in sensory error and confusion from the Sixth Meditation and *Principles*, as discussed above.

articles between 48 and 68 are devoted to explaining how the modes and attributes of these two types of thing (i.e. minds and bodies) can be known or perceived clearly and distinctly. At the end of article 48, he had promised that an account of how appetites, emotions, and sensations can be known was forthcoming; at long last, the title of article 66 announces a return to this topic: “How sensations, emotions and appetites may be clearly known, despite the fact that we are frequently wrong in our judgments concerning them” (AT 8A:32, CSM 1:216). In the previous article, Descartes had explained how, in general, “the modes of thought and extension are to be known” and gave as examples of the former acts of understanding, imagination, memory, and volition (*ibid.*). Sensations, emotions, and passions are further examples of modes of thought. It would appear from article 66 and following that Descartes postponed discussing these modes of thought—especially sensations—because of the confusion that results from our false judgments concerning them. It is more difficult to perceive distinctly that sensations are modes of mind than, say, volitions or memories, because of our tendency (mentioned in both 66 and 68) to judge that there is something in bodies that “resembles” our sensations. The main lesson of these articles then is that one can clearly and distinctly perceive sensations only if one regards them as modes of mind and refrains from judging that there is anything corresponding to them outside thought. To repeat, Descartes is trying to give an account of how our *sensations* are known, not how “colors” qua sensible qualities are known. He is saying that the only way to perceive our sensations clearly and distinctly is by regarding them as modes of mind and withholding judgment about whether they resemble anything outside our mind.³⁹

One has a tendency to lose sight of this point when reading article 68 in isolation, for in the excerpt cited, Descartes speaks not of regarding sensations as modes of mind, but of regarding pain and color as sensations. But as we have seen, the terms for sensible qualities are systematically ambiguous. We typically use the terms “color,” “smell,” “taste,” “sound,” etc. to refer to the properties in bodies that occasion our sensations. But we also sometimes (albeit rarely) use these terms to refer to sensations themselves. This is especially true in the case of pain, which is one of the main examples at issue in both articles 67 and 68. So I submit that the terms “pain” and “colour” are being used here merely to refer to different sensations, for Descartes is making an epistemic claim about how our sensations can be clearly and distinctly perceived.

This reading of article 68 is further confirmed by the French translation of the passage, which removes part of the ambiguity in the Latin original:

But, in order that we may distinguish here what there is of clarity in our sensations (*sentiments*) from that which is obscure, we observe, in the first place, that we clearly and distinctly know pain, colour, and the other sensations (*sentiments*) when we consider them simply as thoughts.

(AT 9B:56)

³⁹ Note how well this reading chimes with *Principles* I, 70, as discussed above.

Descartes is clearly concerned here with how we come to know our sensations distinctly, and the terms “pain” and “colour” are used to refer to different examples of sensations, not to assert that “pain” and “colour,” qua sensible qualities, are reducible to sensations. We perceive our sensations clearly and distinctly by regarding them merely as thoughts or modes of the mind and, again, by refraining from judging that there is anything in bodies “resembling” them (ibid.).

Despite his admonition to Burman not to reify colors (qua mental abstractions), Descartes sometimes seems to make this mistake himself. Most notably, referring to the *Principles*, he writes to Chanut:

it must be remembered, while reading this book, that although I consider nothing in bodies except the sizes, shapes and motions of their parts, I claim none the less to explain the nature of light and heat and all other qualities that are perceivable by the senses; for I presuppose that these *qualities are only in our senses*, like pleasure and pain, and not in the objects which we perceive by the senses, in which there are only certain shapes and motions which cause *the sensations we call light, heat, etc.* This I did not explain and prove until the end of Part Four; nevertheless it is useful to know and observe it from the beginning of the book, so as to understand it better.

(AT 5:291–2, CSMK 3:369; emphasis added)

The claim that qualities such as light and heat are “only in our senses” might seem to suggest that they are real entities that enjoy a status in the perceiver. That is how defenders of the subjectivist interpretation have tended to interpret such passages.⁴⁰ But we need not suppose that Descartes is contradicting what he tells Burman, for there is a sense in which sensible qualities are “in the senses” even on the nominalist reading that I favor, namely, we can abstract them from sensations. As noted in the beginning of this section, we cannot form an idea of, say, a particular shade of red apart from extension and shape, but we can selectively attend to one without attending to the other. Recall that we encountered a similar phrase in *Principles* I, 70, where Descartes refers to “the colour that we sense.” We explained this expression in the same way. Support for this reading may be found, first, in the fact that he also speaks here to Chanut of “the sensations *we call* light, heat, etc.” As in the passage from *Principles* I, 68, this remark indicates that Descartes sees himself as using terms for sensible qualities as mere names for our sensations, abstractly considered, and is not advancing a view about the nature of such qualities as such.

Secondly, Descartes refers in this letter to Chanut to the series of articles that conclude Part 4 of the *Principles*. As we discussed in section 2, the aim of those articles is to identify the mechanical causes of our sensations in external objects in an effort to

⁴⁰ Cf. a similar passage from the Sixth Replies: “[C]olours, smells, tastes and so on, are, I observed, merely certain sensations which exist in my thought, and are as different from bodies as pain is different from the shape and motion of the weapon that produces it” (AT 7:440, CSM 2:297). As in the *Principles* I, 68, Descartes is best read as using the terms for sensible qualities to refer to our sensations. Again, we would refer to sensations in these ways only after having abstracted from them. Descartes’ aim in this passage, as in others that we have seen, is to combat the Resemblance Thesis, not to defend an account of the status of sensible qualities as such.

defeat the Scholastic Resemblance Thesis. General questions about the nature of sensible qualities are never broached, let alone the specific issue about whether such putative entities are reducible to sensations. If this is right, then it seems highly unlikely that Descartes sees himself as making a metaphysical claim about sensible qualities in this letter to Chanut, since it is written in the service of the passage from the *Principles*.⁴¹

4. Conclusion

The aim of this chapter has been to establish that Descartes is a color nominalist. Color and other so-called secondary qualities are merely names for either 1) the mechanical causes of our sensations in external objects or 2) the sensations themselves, considered abstractly. Thus, if one wants to say that there is a distinction between primary and secondary qualities within Descartes' philosophy, it is a distinction between the mechanical properties of bodies that figure into scientific explanations and, the merely nominal properties that play a useful role in our ordinary, pre-scientific conception of the world, but are ultimately dispensable within science.

In the course of defending these claims, I have developed systematic reinterpretations of those passages in which he is purported by commentators to be endorsing this or that account of the ontological status of color. Rather than doing that, he almost always engaged in one of two other projects that are closely related: 1) devising a scientific theory of color vision, according to which the mechanical properties of bodies cause our sensations without resembling them or 2) explaining how our sensations can be clearly and distinctly perceived, and how we can avoid error with respect to them, by withholding judgment about whether they resemble anything outside us. Both projects converge in the effort to defeat the Scholastic Resemblance Thesis. As part of this effort, Descartes uses the locution "what we call colour" in almost every one of his discussions of this topic. The point of this locution, I have argued, is to refer to the causes of our sensations in a metaphysically neutral manner. Descartes thinks that we ordinarily pick out the properties of bodies that cause our sensations on the basis of the sensations themselves. The danger of doing so is that it encourages us to suppose that our sensations do resemble their external causes. Thus, by invoking the locution "what we call," Descartes is explicitly warning us not to be misled by ordinary usage. This is ironic because commentators have almost universally ignored this expression, mistakenly drawing ontological conclusions from passages that were written with the opposite intention.

We discovered the underlying motivation for Descartes' color nominalism within his general account of how much is given in sensory experience or, in his terms, "taught by nature." Descartes thinks that the sole purpose of the senses is to preserve the mind-body union. Thus, the things taught by nature are highly limited and

⁴¹ Downing makes a similar point in her essay in this volume, but in a different context.

restricted to serving this purpose. Most of what we take to be given in experience is in fact the product of false judgments formed in our early childhood and exacerbated by Scholastic philosophical training. These false judgments include not only the Scholastic view that “colors” are qualities in objects, but also the more fundamental position that “colors” are qualities at all. Surprisingly, Descartes is not a friend of qualia, contrary to a myth too long associated with his philosophy.⁴²

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⁴² This paper is an offshoot of an essay (2006) that I co-authored with John Whipple. He was involved in the early stages of researching the present paper, and I am deeply grateful for his contributions. I would also like to thank Margaret Atherton, Nicholas Jolley, Lex Newman, Tad Schmaltz, Al Spangler, Thomas Vinci, and especially Alan Nelson for comments on previous drafts. I am also indebted to audiences at the University of New Mexico, Albuquerque (February 2006); Emory University (November 2008); and University of North Carolina, Chapel Hill (March 2009), where various incarnations of this essay were presented.

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