

CHAPTER 1

POLLYANNA REALISM AND THE SIMPLE THEORY

Phil. I entirely agree with you, as to the ill tendency of the affected doubts of some philosophers, and fantastical conceits of others. I am even so far gone of late in this way of thinking, that I have quitted several of the sublime notions I had got in their schools for vulgar opinions. And I give it you on my word, since this revolt from metaphysical notions to the plain dictates of nature and common sense, I find my understanding strangely enlightened, so that I can now easily comprehend a great many things which before were all mystery and riddle.

George Berkeley (1713/1975: 135-6)

Pollyanna,¹ the heroine of my story, endorses a simple theory. It claims that objects are colored just as they are shaped; typically, objects appear to have the colors they have because of the colors they have; objects were colored before there were observers to perceive those colors; and objects have their colors in the dark, when no one is watching, and sometimes (though not usually) when they appear to have some color they do not have. Colors, Pollyanna believes, are intrinsic, observer-independent, properties of objects that are causally responsible for objects appearing colored. Colors, in other words, are just as Pollyanna experiences them most of the time. Pollyanna doesn't have much to say about colors. She doesn't worry about the ontological status of colors, or whether objects are really colored, or whether colors are properties of objects

¹ Pollyanna is the main character of Eleanor Porter's (1986).

or only "in her head." Why worry? The answers seem obvious. Pollyanna can see that objects are colored and she can see that they are *really* colored too. Indeed, Pollyanna can't help but believe that objects are colored and she suspects that's true of everyone else (although she acknowledges, of course, that some believe that they don't believe it).² Once upon a time, almost everyone agreed with Pollyanna. Those were happy days, before the dark days of scientism, before philosophers lost their metaphysical nerve.

Almost everyone would now insist, however, that Pollyanna is naive, or at least scientifically untutored. Hardly any philosopher, indeed, hardly any school child, would now accept the simple theory unqualified.³ We know too much. We've lost our innocence. It was perhaps with Galileo that the simple theory began losing favor. It continued losing favor while science gained favor. This was no coincidence. It was not, however, inevitable. The simple theory, I will argue, is consistent with our scientific picture of the world. Indeed, Pollyanna's simple theory is correct. But I'm getting ahead of my story. First, why does science seem to undermine the simple theory?

1. SCIENCE AND THE SIMPLE THEORY

Galileo (1623/1660), Descartes (1641/1984), Boyle (1666/1979), Locke (1690/1985), Newton (1730/1952), and a host of others thought that colors, at least as we ordinarily experience, think, and talk about colors, are incompatible with what science tells us about the world. Descartes says:

nothing whatever belongs to the concept of body except the fact that it is something which has length, breadth and depth and is capable of various shapes and motions; moreover, these shapes and motions are merely modes which no power whatever can cause to exist apart from body. But colours, 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 which produces it (1690/1984: 297 (AT VII: 440)).

And later Newton says,

² I have more to say on this point in Chapter 8, §2.

³ Some do, or at least come close. See, for example, Ludwig Wittgenstein (1958), G.E. Moore (1962), John McDowell (1985), P.M.S. Hacker (1987), and Keith Campbell (1993).

if at any time I speak of Light and Rays as colored or endued with Colours, I would be understood to speak not philosophically and properly, but grossly, and accordingly to such Conceptions as vulgar People in seeing all these experiments would be apt to frame. For the Rays to speak properly are not colored. In them there is nothing else than a certain Power and Disposition to stir up a Sensation of this or that Colour (1730/1952: Bk. I, Part II, Prop. II, Theor. II).

Descartes and Newton endorse an error-theory about colors (henceforth 'ET') according to which our experiences of colors are illusory and color predication false. Such theories remain prominent in both philosophy and science. For instance, the noble laureate J.L. Eccles "reports" that "[t]here is no colour in the material world, only the emission of electromagnetic waves of various spectral composition" (1984: 179). The neurophysiologist Semir Zeki tells us

that the nervous system, rather than analyze colours, takes what information there is in the external environment, namely, the reflectance of different surfaces for different wavelengths of light, and transforms that information to construct colours, using its own algorithms to do so. In other words, it constructs something which is a property of the brain, not the world outside (1983: 764).

And the psychologists Ralph Haber and Maurice Hershenson report:

Red is not on the surface of an apple nor in the quanta of light themselves. Rather, it is a perceptual experience that arises as a function of particular properties of light reaching the receptors and selectively exciting different types of receptors whose responses are, in turn, encoded selectively (1980: 92).

A number of contemporary philosophers agree with these scientists in their acceptance of ET, e.g., C.L. Hardin (1988), Paul Boghossian and David Velleman (1989, 1991), Charles Landesman (1989), and Barry Maund (1995). Landesman puts the argument for ET this way:

The scientific argument originating in Locke..., when fully formulated to take into account the concepts and theories of contemporary color science, relies on certain propositions of atomic physics, of optics, of chemistry, and of human physiology and biology. If we had to choose between accepting color Skepticism and casting these aside, we would certainly accept color Skepticism

and retain our science. For casting aside the conclusion of color science would throw into doubt the ability of modern science to explain anything... (1989: 122).

The above argument for ET can be sketched as follows.

1. Our folk view concerning colors is largely incompatible with the received wisdom of science.
2. Therefore, either colors do not exist, or else science is grossly mistaken.
3. If we are forced to give up either our belief in colors or our belief in the purported truths of science, we should give up our belief in colors.
4. Thus, we should accept ET.

The contentious premise of the argument is the first. How is the simple theory incompatible with science? Surely not simply because science never explicitly mentions colors or uses color predicates. No scientific theory proclaims that colors do not exist, anymore than it proclaims that there are no chairs or ice cubes. By looking only at science we learn that science doesn't mention colors, chairs, or ice cubes; we do not learn that colors, chairs, and ice cubes do not exist. ET's defense requires a close look at our commonsense commitments and linguistic practices, and a demonstration of how these commitments and practices are shown by science to be in error. So ET requires a semantics for color predicates before anything follows from science about Pollyanna's simple theory. Looking at science alone tells us nothing about the simple theory.

So to what is the simple theory committed? At least this: colors are visual properties of objects. That is, colors are properties of objects that we see, and we see them (at least most of the time) as they actually are. So if we could show that those experiences are illusory – that science not only fails to mention those colors that we purportedly see, but also demonstrates that those features do not exist – we would have shown that colors, at least as we normally think of them, do not exist.

Locke can be read as attempting such an argument:

Ideas of primary Qualities of Bodies, are Resemblances of them, and their Patterns do really exist in the Bodies themselves; but the Ideas, produced in us by these Secondary Qualities, have no resemblance of them at all. There is nothing like our Ideas, existing in the Bodies themselves. They are in the

bodies, we denominate from them, only a Power to produce those Sensations in us: And what is Sweet, Blue, or Warm in *Idea*, is but the Bulk, Figure and Motion of the insensible Parts in the Bodies themselves... (1690/1985: II-viii-15).

We might understand Locke's argument this way:

- (1) For any experience, *e*, of some feature *F*, *e* is veridical if and only if *e* has some feature, *F**, that resembles *F*;
- (2) Our color experiences are such that there are no features of those experiences that resemble some feature in the external world;
- (3) Thus, color experiences are not veridical.

But read this way, the argument is flawed. First, it depends on an act-object conception of perception. It depends, in other words, on a theory of indirect perception according to which our experiences of the external world are mediated by our direct perception of Ideas.⁴ Second, Locke's argument requires of veridical perception that the Ideas with which we are directly acquainted resemble the world as mediately perceived. But as Berkeley (1713/1992) taught us, it isn't clear how any *Idea* might resemble the external world. If that's right, then, on this reading of Locke, Locke is committed to every experience being illusory.

Nonetheless, Locke's argument has a contemporary analogue. Just as Locke required that Ideas match the mediately perceived qualities they represent, we require that objects have the properties they appear to have in visual experiences and that we report them as having in our everyday descriptions. Here's a way to put the point. Common sense and linguistic practice has it that there is a set of mostly true sentences describing objects as having the colors they appear to have under various conditions, and methods by which we determine which of these sentences are true and which false. 'Linguistic practice', as I'm using the expression, refers to more and less than what we might simply report by observing how speakers describe various objects. *Linguistic practice includes more* because it includes not only those sentences that purportedly describe the world as it is, was, and will be, but also sentences describing counterfactual and merely possible situations – sentences describing how the world might have been. *Linguistic practice includes less* because it is

⁴ For a criticism of the act-object conception of perception, see Smart (1962).



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