

A Pigment of Your Imagination: A Short Discourse On the Nature of Color

Mark Cox

Writer's comment: The research for this essay was originally done in a metaphysics class I took during the fall of 1993, and I feel I must give the appropriate credit to Professor Michael Jubien and his text, A Metaphysical Introduction to Philosophy. In addition, I want to thank my English 103A instructor, Pamela Demory, for helping to improve my writing skills and my friend, Michael White, who came up with the clever title for the essay.

I hope that readers of this essay will not only enjoy it but will ponder the issue for themselves. The debate over the nature of color makes for great late-night dorm discussions and challenges you to see the world in a new light.

—Mark Cox

Instructor's comment: When I assigned an argument essay for my students in English 103A, I made it clear I didn't want to read essays on well-worn topics—gun control, abortion, the death penalty—but on topics that actually meant something to them. What I expected (and got, for the most part) were essays on such topics as the legalization of needle-exchange programs, or in defense of college athletic scholarships. What I did not expect was a philosophical treatise on the nature of color. When Mark first presented the idea to me, I have to admit I was a bit skeptical: yes, I had asked for something out of the ordinary, but perhaps this was somewhat extreme. I already knew that Mark was a good writer, but I worried that the topic would prove too elusive, too abstract, too difficult. Undaunted, he wrote the essay anyway and, happily, proved all my fears groundless. Most of those fears dissipated as soon as I read the title: I knew that the essay would be witty and lighthearted. As I read on, I found that it was also an absorbing intellectual argument. Best of all, the essay is remarkably concrete, enabling us to visualize abstract concepts and making the philosophical complexities he engages in as accessible as, say, this apparently red apple I'm eating for my lunch today.

—Pamela Demory, English Department

How do I know that the colors I see are the same colors that everyone else sees? Could it be that what I call *red* is really somebody else's *yellow* and that all the colors we know are just a result of the associations we have made since birth? These are questions that I have pondered ever since my childhood. Many times I have imagined how fantastic it would be to see the world through another person's eyes

and, possibly, to be exposed to a whole new color scheme of the universe. Perhaps the grass which I had always called green would now be silver and the sky would be pink instead of blue and my wardrobe would suddenly consist of an interesting array of clothes that didn't match. And what about oranges? Would I still be able to call my favorite fruit an *orange* or would I perhaps now refer to it as a *brown*? (There's just something about the idea of eating a brown that isn't very appealing.)

In our everyday language we speak as though colors were physical properties of objects. For example, we say such things as *the apple is red*, and we generally assume that the redness is just as much a part of the apple as the skin or the seeds are. Or if a plaintiff were to testify in court that *the bank robbers made their getaway in a black car*, there would be no question as to what she meant; in her perception, the color of the car was indeed *black*.

But besides just physical objects, we also attribute the same color properties to mental objects, such as thoughts and dreams. For example, it would be perfectly acceptable for someone to say *I had a dream of a red apple*, and it would be generally understood that last night, while the person was asleep, he had an image of an apple in his brain that looked very similar to a real apple. Likewise, the plaintiff in court may suddenly recall an image of the crime scene and confess, *I thought they got into a black car, but now that I think about it, my memory of the car is more of a dark blue*.

The problem with the two ways in which we speak about color is that the physical properties that constitute concrete objects and mental objects are completely different from one another and therefore cannot have the same property of color. For the color of the physical apple has to do with the reflection and filtering of light, while the mental apple is associated with complex brain functions and has nothing at all to do with the reflection and filtering of light. Yet even though it is obvious that the properties which determine the color of the two apples are different, we still refer to them by the same terms of color. So now the question becomes, *which one is the real color?* Are colors indeed part of concrete objects, or are they located only in the brain?

This division over the nature of color has resulted in two main schools of thought: objectivism and subjectivism. The goal of each philosophy is to not only prove *where* color is but also to account for the apparent ambiguity in the way we speak about color.

Objectivism states that colors are concrete properties of objects. This view is most in line with our common-sense understanding of color and is also reflected in the way we generally speak. Objectivists argue that the duplicity in our conception of color is simply a result of our sloppy use of language and that we as humans have mistakenly attributed the same terms of color to two different properties. Objectivists account for the colors in our dreams by appealing to a new property of *phenomenal color*. What this means is that the red apple in my dream is not *really* red but only *phenomenally* red; the fact that the real apple and the mental apple look the same is incidental. Therefore, the solution for the objectivist is to simply define a distinction between the color of physical objects and the color of mental objects.

There are a couple of things wrong with this argument. First of all, to simply explain the difference between the colors of objects and colors of dreams by making up a new term seems rather arbitrary, as certainly the colors in our dreams do *appear* to be the same as those in physical objects. But an even more convincing argument against objectivism is that it is not in line with the common understanding of the way light works.

This appeal to the common understanding of the way light works is the main argument for the second philosophy of color called subjectivism. This view states that colors are not part of external physical objects at all but rather are located only in the mind and are thus *subjective* to individuals. The subjectivists begin their argument by affirming the fact that the sun, as well as most light bulbs, emits the full spectrum of visible light. This light travels through the atmosphere in the form of waves and particles and in turn "shines" on objects. The surfaces of these objects possess various textural properties that absorb and filter all but a certain frequency of light. This specific band of light is then reflected off the surface of the object and into our eyes. The light then stimulates the rods and cones within our eyes and converts those wavelengths into an electrical signal. This signal travels from our optical nerve to the brain, where it is processed into what we perceive as objects having color. Therefore, the subjectivist concludes that the external world does not contain color, but that color is only a conversion of light energy within our minds. In addition, we do not actually "see" with our eyes; rather, our eyes are merely receptors for light. What we actually "see" are the images within our brains sent by the impulse of the rods and cones within our eyes.

An interesting question arises as a result of the subjective argument about color: if a red apple is hanging on a tree and yet no one is looking at it, is it really red? (This question is similar to the infamous *if a tree should fall in the forest* question.) According to the subjectivist view about color, the answer would have to be *no*, for since color is dependent upon the individual and since there is no mental conversion taking place, there is no color.

As a result of this paradox, some people argue that color is not really either in objects or in the mind but rather that color is the actual frequency of light itself. This is similar to the objectivist belief about color in that it places colors in the external world, but instead of objects having color it is the actual light which has color. If this is true, then objects could reflect the specific wavelength of red whether anyone is looking at it or not, and therefore an apple would be red even if humans never existed.

The problems with this theory are, first of all, that it still doesn't account for how we see colors in our dreams. For if color is only in light, then how does that light get beneath my darkened skull to shine on the red apple in my dream? Second, it neglects the fact that light is made up of energy waves and particles, which themselves are invisible and have no color. Therefore, the argument that color is located in light is really just another form of objectivism and still does not explain the nature of color.

The question of whether or not everyone sees colors the same is still uncertain, as it is unclear exactly how the brain converts light impulses into color images.

Ultimately, the argument over the nature of color is moot, as most of society, including myself, out of an appeal to convenience, will continue to refer to objects in the external world as having color. (This lack of practical significance concerning the nature of color is partly the reason why I changed my major from philosophy to English.) Nevertheless, it is certain that colors themselves exist solely in the minds of individuals and that light to our eyes is analogous to a floppy disk in a computer—it is merely the input data that our brain processes into what we attribute the term *color*.