

**Review of Mazviita Chirimuuta's *Outside Color***

Wayne Wright

wayne.wright@csulb.edu

Mazviita Chirimuuta's *Outside Color* aims to build an account of color that is rooted in contemporary science and informed by historical developments, while providing "an ontological position that a color scientist would be best off committing herself to" (p.145). Another goal is to motivate an understanding of perception that bears on the rivalry between Marrians and Gibsonians (p.160).<sup>1</sup> The book displays an impressive command of the relevant philosophical and empirical literatures. Its critiques of received philosophical thinking about color and perception demand to be taken seriously and Chirimuuta's positive views should draw much attention in the years to come.

The account presented has three main features: adverbialism about color properties, radical relationism concerning the nature of perception, and pragmatism regarding assessments of perceptual accuracy. Chirimuuta adopts an event predicate theory of adverbs and proposes that colors are properties of perceptual events. Traditional adverbialists place the events with which they are concerned either "inside" perceivers or out in the world. However, according to Chirimuuta, colors are not locatable as either inner or outer; this "unlocatability" of color is consonant with Gibson's notion of affordances (pp.134-135) and the "Janus-faced" nature of

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<sup>1</sup> Marrians consider perception to be a matter of constructing representations of the environment on the basis of inferences from sensory stimulation, whereas Gibsonians view perception as an exploratory activity that puts the perceiver in direct contact with her environment, without any need for intermediaries such as inferences and representations.

color noted by vision scientists such as Mausfeld (2003). Two forms of relationism that Chirimuuta endorses are pertinent here. One has it that perceptual events involve not just perceivers and objects, but (crucially) “interaction” between them; this is the radical relationism about perception noted above. Chirimuuta is also a relationist about color, as her adverbialism takes colors to be properties of the interactive perceptual events that connect perceivers and objects. This is in some sense a qualia theory, as color turns out to be a property of experiences and “[strictly] speaking ... not a property that can be attributed to extra-dermal objects” (p.145). Thus there is the threat of convicting color experience of massive and systematic error, since (as proponents of phenomenal transparency insist) colors look to be properties of object surfaces, not properties of experiences.<sup>2</sup> However, the account is billed as realist and avoiding error theory. Citing pragmatist considerations and the influence of Gibsonian ecological psychology, Chirimuuta explains that this is based on a redefinition of what realism amounts to (p.118) and a rejection of the dominant “detection/correspondence” model of perception (p.109).

The book starts by arguing that philosophers of color have too easily taken on a strong form of scientific realism and an analogous conception of the task of perception. Regarding the former, Chirimuuta observes that scientific realism does not lack for critics and she draws a great deal of inspiration from recent pragmatist flavors of scientific realism. Even with a commitment to industrial-grade scientific realism, though, it is an empirical matter whether science and perception are “in the same business” (p.11). If perception does not aim to reveal the true nature of the physical world, it is a mistake for assessments of perceptual success to turn on the demand that experience give us anything like the unvarnished objective picture of our surroundings that we (perhaps) expect from physics. Basic facts about perceptual functioning and the

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<sup>2</sup> I am simplifying matters by focusing on surface color.

environmental challenges facing us and other creatures should convince us that perception lacks that goal. Thus in evaluating color experience for veridicality, it is better to focus on its utility for guiding us through our environment and not whether the colors we encounter in experience correspond to distal properties (p.109).

This “pragmatist turn” is key to the book’s entire project, as it keeps Chirimuuta from ending up in the eliminativist camp and pushes her to break with those who also hold relationist views of color (such as dispositionalists). Chirimuuta is sympathetic to standard eliminativist arguments against color objectivism (pp.44-45). However, she denies that color experience is nothing but pervasive illusion on the grounds that such views are “counter to naturalistic aims” (p.45) and based on the faulty demand (common to eliminativists and objectivists) for correspondence with distal properties (p.126). As for her fellow color relationists, it is alleged that there is little difference between their accounts and objectivism, as they share with the objectivist the idea that the properties we encounter in color experience are properties of objects (pp.67-68).

Key details of Chirimuuta’s alternative position begin to emerge in an examination of the purpose of color vision. She focuses on empirical research that deals with the interaction between the processing of chromatic information and that of other visual features. It is argued that color is not simply tacked on after achromatic information has been employed to segment objects, determine their depth and orientation, and track their motion (“coloring in”). Instead, the visual system uses chromatic information to help perform those tasks and the processing of those other visual attributes affects perceived color. The upshot is that “*color vision doesn’t help us see the colors of things; it helps us see things*” (p.86; original emphasis). This is set against the idea that color vision has the function of presenting to us surface properties of objects. According to

Chirimuuta, color vision is “for” facilitating the perception of objects and features such as depth, form, and motion (p.76),

A potential objection Chirimuuta considers is that the interaction between the processing of color and other attributes does not entail that color vision lacks the function of detecting color properties. She responds by pointing to the range of different roles chromatic information plays in visual processing and claiming that only a prior commitment to the detection/correspondence model would lead one to think that color is making a “merely causal” contribution to all those other aspects of visual functioning while the true function of color vision is to recover surface properties of objects (p.98). However, some opponents might be satisfied if it turns out that one of the things color vision does is (try to) track surface properties of objects. Given that color experience often closely depends on surface reflectance properties of objects and that we enjoy a number of important advantages due to experiencing objects as being colored (even the eliminativist is glad to admit these things), it is not obvious why that should not be granted. In that case, we would have a variegated picture. On at least one dimension of evaluation color vision might be illusory, depending on how things turn out in the mainstream color realism debate. On others, it counts as veridical due to the high degree of perceptual success it facilitates. Since we are dealing with a complex, evolved biological system, this result seems tolerable and perhaps even welcome.

Relatedly, eliminativists are liable to charge that Chirimuuta has constructed a straw man version of their position. As noted above, she considers eliminativism and its attendant error theory to be contrary to naturalistic aims. Chirimuuta also states that “[it] is strange to think that animals could survive in such epistemically shaky circumstances” (p.125) and that “the significance of color vision in guiding animals around their environments would tell against the

eliminativist doctrine that color is *pure* falsity” (p.131; original emphasis). However, eliminativists have addressed potential benefits of color vision in an achromatic world, touting many of the same phenomena Chirimuuta emphasizes. As for whether eliminativists are committed to color being a source of nothing but falsity, consider Hardin’s (1992, pp.380-381) remark that color vision “[supplies] the means by which a rich amount of sensory information can be rapidly and efficiently represented by cognitive machinery of limited capacity.” Additionally, some vision scientists have voiced agreement with Chirimuuta’s claim that color should not be investigated as an isolated attribute (i.e., independently of form, motion, etc.), while espousing eliminativist views; e.g., Hoffman (2003a,b), Mausfeld (2003). Without a compelling argument that eliminativism has intolerable epistemological results, it is unclear what good reason there is to pursue the revisionary accounts of perception and the metaphysics of color Chirimuuta goes on to champion.

As for the form of color relationism Chirimuuta favors, like other relationists she seeks to avoid eliminativism while acknowledging the contribution of the perceiving subject to color experience. Unlike typical forms of color relationism, however, her account does not merely appeal to a subjective component in defining color properties that are attributed to objects; e.g., redness is the disposition of an object to cause red experiences in normal perceivers in normal circumstances. Rather, Chirimuuta plays up the active nature of perception, following the Gibsonian-inspired enactivists in understanding perception to be an exploratory activity that connects perceivers to their environment in a way that guides successful behavior, rather than as a state in which input from the world is passively received and contemplated. Chirimuuta’s novel twist on this relationist approach to perception is to take the theoretically relevant perceptual processes to be events of interaction between perceiving subjects and perceived objects. This is

portrayed as a recognition of metaphysical consequences of enactivism that have heretofore been overlooked by the view's chief proponents (p.146). Colors are properties of neither distal objects nor private mental episodes. Instead, they are properties of interactive perceptual events, ways that perceivers see the objects to which they are perceptually connected (p.142). A complication for this adverbial approach that Chirimuuta addresses is hallucination, in which one might have color experience while not interacting with an object out in the world.

The phenomenology of everyday color experience poses a threat to Chirimuuta's account. Colors, it is said, do not look like relational properties, nor do they appear to be properties of perceptual goings-on. Rather, introspection of everyday color experience is thought to reveal that colors are presented as intrinsic properties of object surfaces. Since our epistemic access to color begins with color experience (this includes the data available to scientists; p.209), such compelling phenomenological insights suggest constraints on theorizing about color. Any theory that makes colors out to be properties of perceptual states or processes runs afoul of those constraints. The book's final chapter is dedicated to this issue.

Chirimuuta contends that the argument from phenomenology illicitly trades on a theoretically-informed interpretation of a basic fact about vision: that it is exteroceptive and outer-directed. Inner-directed, interoceptive modalities like pain derive their usefulness from presenting states of one's own body and this could plausibly be thought to mean that the properties encountered in such experiences are presented as relational. In the case of color vision, its usefulness depends on it taking input from the outside and color experience "[looking] as if it has a source in the external world, not only inside you" (p.200). Chirimuuta need not establish that vision presents colors as perceiver-dependent, only that it is neutral regarding perceiver-independence. In that case, perceiver-independence would not be a feature of the

phenomenology of color experience itself, but would instead be an interpretation of that phenomenology. The relationist could block the move from the outer-directedness of color to its perceiver-independence by undermining the theoretical framework that supports this interpretation; the discussion of how that might be done depends in part on issues connected to the content of color experience that are treated in the penultimate chapter. Of course, for this maneuver to be convincing, Chirimuuta also needs to account for how color experience can have its outer-directedness without presenting colors as non-relational, perceiver-independent properties of objects.

Suppose one agrees that the basic phenomenology of color experience is neutral regarding perceiver-independence, but finds it so intuitively compelling to take colors to be perceiver-independent properties of objects that it is unavoidable to do so when theorizing about color. Perhaps it will be claimed that such an interpretation is the only theoretical stance that squares with the outer-directedness of color vision. Chirimuuta responds by returning to the themes that color is for seeing objects and that it is a mistake to conceive of color as an isolated, atomistic attribute that is separable from attributes such as form and motion. She contests the notion that outer-directedness is a property of color experience itself and advances the idea that the outer-directedness of color (and perceptual experience generally) “actually results from the bundling of color with nonchromatic perceptual qualities when we look at objects around us” (p.205). That is, the outer-directedness of visual experience is a property of the whole (its Gestalt), not any of its elements. Thus it is not open to argue from the outer-directedness of color experience to a claim about the perceiver-independence of color.

Importantly, however, Chirimuuta acknowledges that we do experience objects as bearing color properties (p.208). There is also a body of empirical work that speaks of the

binding of color to object representations through, for example, recurrent neural processing; see Raftopoulos (2009) for discussion of this research. There looks to be ample room for eliminativists and objectivists (and traditional relationists, for that matter) to maneuver here, granting Chirimuuta large chunks of what she says about “visual experience [being] in the business of presenting things, not simple perceptual elements like colors” (p.208) while insisting that the only way to do proper justice to the role of color in our experience is to understand it as a property attributed to objects. If that is the case, then the clash between adverbialism and phenomenology does not look as though it has been resolved and the question of whether objects actually have the color properties that we see them as bearing seems perfectly legitimate.

In conclusion, Chirimuuta presents a complex package of ideas, several of which need further elaboration and defense. This is unsurprising, given the degree to which the book breaks with received thinking. As things stand, Chirimuuta’s critiques of entrenched views about the nature of perception should prompt even those not inclined to endorse her adverbialism to reconsider some of the details of and arguments for their accounts. Additionally, while not addressed in this review, the way in which Chirimuuta frames the connection between her metaphysical theorizing and the relevant sciences is quite valuable. She is upfront about the challenges facing her attempt to “derive a color ontology from perceptual science” (p.101) and her effort to achieve that involves a number of interesting choices about how to proceed. Chirimuuta’s insightful discussion of these issues lays the groundwork for much-needed careful reflection on the part of philosophers of color about the significance of their work.

### **Additional References**

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