The Consciousness Knowledge Requires

Ori Beck*

Forthcoming in Beck, O. & Masrour, F. *The Relational View of Perception: New Philosophical Essays*. Routledge.

Please cite published version.

Abstract

Suppose you perceive a ball's redness, and on that basis come to believe that the ball is red. Is it necessary that, if you have the basis that you do have for your belief, then your belief is true? In other words, is your belief conclusively based? After motivating the project of answering this question in the affirmative, I argue that the traditional positive relationalist answer (given, in importantly different ways, by Johnston, Schellenberg, and on at least some readings, McDowell) fails, because it entails (falsely!) that a ball's yellowness and a ball's redness cannot both be successfully perceived yet appear the same to the perceiver. I then develop an alternative positive relationalist answer to the conclusive basis question, which is free of the false entailment.

Introduction

When we have beliefs, we sometimes have them on the basis of something. To say that b is the basis of S's belief that p is to say that S bases her belief that p on b; where basing the belief that p on b requires acquiring or sustaining the belief that p by taking account of, or at least sensitively responding to, some of b's features.[1] Here I will be focused on the bases we have for our ordinary empirical beliefs. As I use terms, an empirical belief is a belief whose content is an empirical proposition, i.e., a contingent, a posteriori proposition about the external world. An *ordinary* empirical belief is a belief whose content is an *ordinary* empirical proposition, i.e., an empirical proposition which merely attributes fairly determinate perceptible properties to perceptible individual objects (e.g., the belief that that ball is red.) The bases we have for our ordinary empirical beliefs are not all made equal. Some can be better than others. I'm interested in finding just how good they can get.

To put my cards on the table, my goal is to defend the view that

*This paper has benefited from conversations and written comments from too many to name. I am especially grateful to insights from Dominic Alford-Duguid, John Bengson, David de Bruijn, Chris Hill, Fiona Macpherson, Mike Martin, Adam Pautz, Matt Soteriou, Susanna Schellenberg, and Assaf Weksler. I would also like to thank the participants of the New Waves in Relationalism Online International Conference at the University of Wisconsin–Madison, the 2024 Annual Conference of the Philosophy Department at Auburn University, and the philosophy colloquia of Ben-Gurion University of the Negev and Bar-Ilan University. This research was supported by the Israel Science Foundation (grant No. 916/21) and the German Research Foundation (grant GZ: SCHM 3074/3-1, AOBJ: 698063; Project number 527893220). My greatest debt is to Farid Masrour, whose engagement with the project of this paper has improved it immeasurably.

[1] See Alston (1988) and Pryor (2001; 2014). For some attempts at an analysis of the *S bases her belief that p on b* relation, see Audi (1986), Korcz (1997; 2015), and Neta (2019). Also note that the characterization of "basis" given in this paper leaves *open* whether basing the belief that p on b entails being able to (i) know or believe that one has b, or (ii) cite b in a rationalizing explanation. Additionally, the characterization leaves open whether a subject's basis for believing that p is identical to the subject's reasons, or evidence, for believing that p. The answer depends on your conception of evidence, or reasons: On one conception, the terms "evidence" or "reasons" are synonymous with "potential basis". But Williamson (2000, pp. 194-200), Plantinga (2001) and McGrath (2018) have a different conception. They argue that a subject's evidence and reasons are all propositions. But visual experiences, which by the lights of many are potential bases, are mental states and not propositions. So it seems that Williamson, Plantinga and McGrath's position has the result that a subject's potential bases for belief may diverge from the subject's reasons and evidence. That said, it might still be the case that a subject's basis for belief *provides* the subject with reasons/evidence, by bearing some intimate relation to the propositions which constitute the relevant reasons/evidence.

(Conclusive) We can have *conclusively based* ordinary empirical beliefs,

where S's belief that p is conclusively based iff S believes that p on some basis b such that, necessarily, if S has b, then it is the case that p. For convenience, I will often express the idea that, necessarily, if S has b, then it is the case that p, by omitting reference to S and simply saying that b necessitates that p.

A challenge, however, faces (Conclusive): We already noted that basing a belief on a basis requires acquiring or sustaining the belief by taking account of, or at least sensitively responding to, some of the basis' features. We cannot, however, sensitively respond to just any feature of a given sensory basis. For example, if x is neither constitutionally nor causally related to the given sensory basis, we plausibly cannot sensitively respond to the basis' co-existing with x. Or, to give another illustration, we plausibly cannot sensitively respond to some single elementary particle's being among the basis' realizers. So what features of a given sensory basis can we respond to? One natural idea is to equate the features to which we can sensitively respond with features of the phenomenal characters we enjoy. The overarching line of thought here is that if b can serve as a belief's sensory basis, then b is a state of enjoying such and such phenomenal character (or a collection of such states). But this line of thought leads to trouble. For it is also plausible that any phenomenal character whatsoever can in principle be the phenomenal character of a misleading illusion or hallucination. So, states of enjoying phenomenal characters (taken either individually or collectively) *never* necessitate that things are any way at all. Thus, on the one hand, it seems that any possible sensory basis of an ordinary empirical belief is an enjoying of a phenomenal character (or several such), and on the other hand, it seems that any enjoying of a phenomenal character (or several such) does not necessitate any ordinary empirical proposition. Setting aside the possibility of ordinary empirical belief that are conclusively based on a basis that extends beyond the sensory, we thus reach the conclusion that our ordinary empirical beliefs cannot have a conclusive basis. In short, the challenge facing (Conclusive) is

The Epistemic Problem of Illusion and Hallucination:

> **(Character as Basis)** If b can serve as a sensory basis of an ordinary empirical belief, then b is a state of enjoying such and such phenomenal character (or a collection of such states).
>
> **(Inconclusive Character)** Any state of enjoying such and such phenomenal character (and any collection of such states) does not necessitates that p (where p is any ordinary empirical proposition). Therefore,
>
> **(Inconclusive)** If we set aside conclusive bases that extend beyond the sensory, ordinary empirical beliefs cannot be conclusively based.

This paper attempts to defuse just this argument. This is nothing new. Johnston (2004; 2006; 2011) and Schellenberg (2016b; 2018) attempt this too, as does (on at least some readings) McDowell (1996; 2008; 2011). But their way of defusing the argument involves the acceptance of, very roughly, the view that the ways individual objects sensorily appear to us in perception (as opposed to in illusion or hallucination) *can* necessitate those objects to have certain perceptible properties. However, broadly empirical arguments—such as those by Pautz (2011; 2014; 2017), Block (2010; 2007c) and Masrour (2015; 2017), defended in my (2019a; 2022)—lead me to accept that:

(Phenomenal Internalism) The ways we are sensorily appeared to metaphysically supervene on our own intrinsic properties.

Below I argue that this (Phenomenal Internalism) leads just to the falsity of (the more precise formulation of) the view that the ways individual objects sensorily appear to us in perception can necessitate those objects to have certain perceptible properties. The upshot is that if I wish to defuse the Epistemic Problem of Illusion and Hallucination, I

must tread a path different from that which Johnston, Schellenberg and (on at least some readings) McDowell have trodden. I tread this path here.

The structure of this paper is as follows: In section 1 I motivate the project of defending (Conclusive). In section 2 I present the general strategy Johnston, Schellenberg, and McDowell have pursued (though in different ways) for defending it. In sections 3 and 4 I argue against their strategy. Finally, in section 5 I present my own positive proposal.

1 Motivating the Project

One reason for which I embark on my defense of (Conclusive) is that I find epistemological views which deny it counter-intuitive.[2] To feel the force of the intuition they violate, consider two cases:

> *Alice.* Alice has a good look at a red ball. She sees the ball's being red and thereby acquires immediately based knowledge that that ball is red.
>
> *Bob.* Bob has a good look at a distinctive trail of wet red paint in his yard. Recalling his knowledge that such trails in his yard indicate that they were left by a red ball, he infers and thereby comes to know that the ball that left the trail is red.

There is a clear and palpable intuitive difference between these two cases. This intuitive difference is that Alice's knowledge is superior, more secure, and less conjectural than Bob's knowledge. But why do we feel this? Austin (1962, p. 115) offers what I take to be an excellent explanation: Alice's knowledge is superior to Bob's because Alice's knowledge is based on something that "settles the question" of its truth, while Bob's knowledge is not. Austin's reference to "settling the question" here alludes precisely to our distinction between conclusive and inconclusive basing. Austin's thought is that Alice's knowledge is conclusive, because it is based on a state of hers which necessitates the proposition Alice knows. Bob's knowledge, on the other hand, is inconclusive, because it is based on (an inference from) states of his which do not necessitate the proposition that Bob knows.

Austin's conclusiveness-based explanation of the intuitive superiority of Alice's knowledge to Bob's is a good one. But to show that his is it is the best explanation, let's consider some alternatives.

One rival explanation that may come to mind is that Alice's knowledge is superior to Bob's because her knowledge is immediately based, while Bob's knowledge is mediately based. The explaining generalization here is that, ceteris paribus, immediately based knowledge is intuitively superior to mediately based knowledge.

Though simple and straightforward, this explaining generalization is false. Suppose that once Alice has acquired the knowledge that the ball is red, she infers from it, thereby acquiring mediately based knowledge, that the ball is red or discombobulated. If immediately based knowledge were ceteris paribus superior to mediately based knowledge, it would have been intuitive to us that Alice's immediately based knowledge that the ball is red is superior to her mediately based knowledge that the ball is red or discombobulated. But that is not the intuition we have. Instead, we feel that Alice's knowledge of both facts is equally good.

A different explanation is that Alice's knowledge is superior to Bob's because her knowledge is *de re* or demonstrative knowledge, while Bob's knowledge is *de dicto* or by-description knowledge. The explaining generalization here is that, ceteris paribus, *de re* or demonstrative knowledge is intuitively superior to *de dicto* or by-description knowledge.

This second rival explanation is not much better than the first. Suppose that by looking at the ball Alice acquires two pieces of *de re* or demonstrative knowledge - first, that that ball is red; and second, that that ball is the only ball

[2] I also believe upholding (Conclusive) is essential to answering a certain (nonstandard but still very troubling) kind of skeptical argument, but I won't develop this thought further here.

in her line of sight. Alice then uses these two pieces of *de re* or demonstrative knowledge to inferentially acquires the *de dicto* or by-description knowledge that the only ball in her line of sight is red. Now, if *de re* or demonstrative knowledge were ceteris paribus superior to *de dicto* or by-description knowledge, it would have been intuitive to us that Alice's *de re* or demonstrative knowledge about the ball is superior to her *de dicto* or by-description knowledge that the only ball in her line of sight is red. But, again, that is not the intuition we have. Instead, we feel that Alice's *de re* or demonstrative knowledge and her *de dicto* or by-description knowledge are equally good.

A third rival explanation of our intuition says that Alice's knowledge is superior to Bob's because Alice's confidence in her knowledge is higher than Bob's confidence in his knowledge. The explaining generalization here is that, ceteris paribus, knowledge held with greater confidence is intuitively superior to knowledge held with lesser confidence.

The explaining generalization just offered, even if it is correct, does not explain our intuitions about Alice and Bob. This is because we can stipulate that both Alice and Bob are certain, and have complete confidence, in their respective pieces of knowledge. Even so, the clear and palpable intuition that Alice's knowledge is superior to Bob's knowledge remains. This intuition still needs to be explained.

A fourth rival explanation of our intuition appeals to the reliability of the processes by which Alice and Bob acquired their knowledge. Specifically, the explanation is that Alice's knowledge is superior to Bob's because the process by which Alice acquired her knowledge (i.e., judging that a ball is red on the basis of an experience as of a ball's being red) has a lower probability of leading to a false judgment than the process by which Bob acquired his knowledge [i.e., judging that a ball that left a distinctive trail in his yard is red on the basis of (i) an experience as of a distinctive trail in his yard, and (ii) a belief that such trails in his yard indicate that they were left by a red ball.] The explaining generalization here is that, ceteris paribus, knowledge acquired by a process with a lower probability of leading to a false judgment is superior to knowledge acquired by a process with a higher probability of leading to a false judgment.

Though there is much to say in favor of such reliability considerations, I do not believe that they can explain our intuitions about the relative merits of Alice and Bob's knowledge. For let us suppose that we rigorously study both Alice and Bob, examine the condition that obtain when they have their respective experiences, estimate the probability that they would have hallucinatory or illusory experiences under such conditions, test the probability of something other than a single red ball leaving a distinctive trail in Bob's yard, etc. Based on these investigations, we determine that the processes by which Alice and Bob each acquired their knowledge have *identical* probabilities of leading to false judgments. Would we then lose our sense that Alice's knowledge is superior to Bob's knowledge? We would not. Yes, Alice and Bob acquired their respective pieces of knowledge by processes that were equally likely to lead them astray. Nonetheless, it is still as palpable to us than ever that Bob's knowledge is conjectural and insecure in a way that Alice's knowledge is not. This intuition still needs to be explained.

A fifth rival explanation of our intuition says that Alice's knowledge is superior to Bob's because the proposition that Alice knows ("that ball is red") is entailed by the representational content of the basis on which Alice knows it; while the proposition that Bob knows ("the ball that left that trail is red") is not entailed by the representational content of the basis on which Bob knows it. The explaining generalization here is that, ceteris paribus, knowledge that p whose grounds entail that p is intuitively superior to knowledge that p whose grounds do not entail that p.

This explanation is no better than the previous ones. To see why, let's stipulate (just as the fifth explanation suggests) that the proposition that Alice knows ("that ball is red") is entailed by the representational content of the basis on which Alice knows it. But now let's also stipulate that the proposition that Bob knows ("the ball that left that trail is red") is *equally* entailed by the representational content of the basis on which Bob knows it. Since Bob's knowledge is based on both a perception and a bit of background knowledge, our stipulation can be this: First,

stipulate that Bob's perception has a representational content entailing some proposition of the form "that trail is *F*". Second, stipulate that Bob's background knowledge is of some proposition of the form "for all trails that are *F* there is a unique ball that left them, and that ball is red". Together, these entail the proposition that Bob knows. With these stipulations in place, ask yourself again: Is Alice's knowledge still superior to Bob's knowledge? I predict that your answer will be a clear "yes".

I conclude that the conclusiveness-based explanation is best. It provides us with a motivation to defend (Conclusive).

2 The Perceptual Appearances Strategy

Suppose you are motivated to defend (Conclusive), and so to defuse the Epistemic Problem of Illusion and Hallucination. How might you do that? Well, the task requires finding a class of mental states that have two features: On the one hand, they are Base-able, i.e., capable of serving as bases for ordinary empirical beliefs; and on the other hand, they are Necessitating, i.e., capable of necessitating ordinary empirical propositions. What might these states be?

Much contemporary relationalist thinking is motivated by, and entails, an answer to this question. The answer is that the Base-able and Necessitating states we are looking for are certain perception-related and phenomenal-consciousness-related states. The states are perception-related, in the sense that they are (partly) constituted by perceived mind-independent elements from the subject's external environment.[3] This constitution by external elements plays a key role in relationalist explanations of how the states necessitate ordinary empirical propositions. The states are also phenomenal-consciousness-related, in the sense that they are partly constituted by certain aspects of phenomenal character—specifically, by the ways subjects are sensorily appeared to. This constitution by aspects of phenomenal character plays a key role in relationalist explanations of how subjects can sensitively respond to relevant features of the states, and thus of how the states can to serve as bases for ordinary empirical beliefs.

While I take this sketch of the (broadly) relationalist position to be on the right track, I also think that the details matter. In particular, I think that one elaboration of the position—captured and expressed (in importantly different versions) by Johnston (2004; 2006; 2011), Schellenberg (2016b; 2018) and (on some readings) McDowell (1996; 2008; 2011)—goes astray. This common elaboration (call it, "the perceptual appearances strategy") says that the precise Base-able and Necessitating states we are dealing with are those states which I will label "*perceptual appearances*".

A perceptual appearance is a subject's state of having perceived individual objects sensorily appear to her in such and such ways in a perception. (E.g., a perceived ball's sensorily appearing reddish to me in a perception is a perceptual appearance.) There are two ways in which an appearance can fail to be a perceptual appearance: It can be an illusory appearance (i.e., a case in which an individual object appears some way to the subject, and its so appearing is in some way defective), or it can be a hallucinatory appearance (i.e., a case in which the subject is appeared to in some way, but nothing whatsoever appears that way to the subject). The precise relationship between conscious perceptions and perceptual appearances is a delicate matter. On some views, it is necessary that subjects consciously perceive of the same elements iff they have the same perceptual appearances. These views may find it convenient to identify types of perceptual appearances with types of conscious perceptions. On other views, however, it is possible for subjects to perceive the same elements and still enjoy different perceptual appearances. For example, the views may deem it possible for you and a color inverted twin to both perceive a ball's redness, and still enjoy perceptual appearances in which that redness appears different non-defective ways to you and the twin. These other

[3] I take Johnston (2006; 2011), McDowell (1998; 2008; 2011), and Schellenberg (2013b; 2016a; 2016b; 2018) to be adherents of this idea, in addition to card-carrying naive realists such as Allen (2016), Brewer (2018; 2019; also in Brewer et al. 2018), Campbell (2002), Fish (2009), French and Phillips (2020), Genone (2014; 2016), Logue (2012; 2017), Martin (2002b; 2004; 2006), Sethi (2020), Snowdon (1990) and myself (2019a; 2019b; 2022).

views will need to distinguish between types of perceptual appearances with types of conscious perceptions. So as not to prejudge the matter at this stage of the dialectic, I focus my discussion on perceptual appearances, leaving the matter of their relationship to perceptions open. That said, a corollary of my arguments will be that types of perceptual appearances cannot be identified with types of conscious perceptions.

The perceptual appearances strategy specifies a systematic matching between perceptual appearances and the ordinary empirical propositions that they can necessitate and base. One way of describing the matching is this: First, select a unique (and never to change) subject, point in time, and set of conditions of observation. (Different selections will correspond to different versions of the perceptual appearances strategy.) Label these, respectively, as the "standard subject", "standard time" and "standard conditions". Then, for any (fairly) determinate perceptible property *F*, let W_F be the way that *F* things would sensorily appear to the standard subject, if the standard subject perceived their being *F* at the standard time and under the standard conditions.[4] Finally, what all versions of the strategy agree to is that for *any* subject *S* (and no matter the time or further condition), the state of perceived objects *o*'s sensorily appearing W_F to *S* in a perception is a perceptual appearance that necessitates, and that can potentially base a belief whose content is, the ordinary empirical proposition that objects *o* are *F*. In other words, the perceptual appearances strategy accepts the following theses:

(Perceptual Appearances as Basis) The ordinary empirical belief that *o* are *F* can be based on perceived individual objects *o*'s sensorily appearing W_F to *S* in a perception.

(Conclusive Perceptual Appearances) Necessarily, if perceived individual objects *o* sensorily appear W_F to *S* in a perception, then *o* are *F*.

One objection to the perceptual appearances strategy is that our ordinary empirical beliefs can be sensorily based only on (our enjoyings of) phenomenal characters ("Character as Basis" thesis). This thesis, for example, allows ordinary empirical beliefs to be based on our being sensorily appeared to in various ways (e.g., it allows a subject's belief that a red thing exists to be based on the subject's being sensorily appeared to in a red way). However, the objection continues, perceptual appearances are constituted not just by ways in which subjects are sensorily appeared to, but also by the individual objects that so appear to the subjects. (For example, a ball's sensorily appearing reddish to me in a perception is a perceptual appearance constituted not just by my being appeared to in a reddish way, but also by a certain actual, physical ball.)[5] Therefore, perceptual appearances are not (aspects of) phenomenal characters. So, by the "Character as Basis" thesis, our ordinary empirical beliefs cannot be based on on our perceptual appearances. So perceptual appearances are not Base-able, i.e., (Perceptual Appearances as Basis) is false.

This objection, however, is unpersuasive for three reasons. First, the objection relies on an inference from "perceptual appearances are constituted by the individual objects that appear to subjects" to "perceptual appearances are not (aspects of) phenomenal characters". While this inference will be appealing to phenomenal generalists (e.g., Neil Mehta 2014, Montague 2016, chp. 6 and Schellenberg 2010; 2016; 2018), who deny that phenomenal characters have particulars—and *a fortiori*, individual objects—as constituents, others will reject it. Specifically, the inference will be rejected by phenomenal particularists (e.g., Campbell 2002, Gomes and French 2016, and Martin 2002a; 2002b) who argue that consciously perceived particulars are constituents of the perception's phenomenal character. It will also be rejected by phenomenal pluralists (e.g., Masrour 2023 and Beck 2019b), who distinguish between two kinds of

[4] I am here assuming, without argument, that there is such a thing as *the* way that *F* things would sensorily appear to the standard subject, if the standard subject perceived their being *F* at the standard time and under the standard conditions. I am not, however, assuming that *F* things would look a unique way to perceiving subjects, if the subjects are themselves different, or under different conditions of observation, or perceive at different times.

[5] As I use terms, "that ball's sensorily appearing reddish to me" picks out the same state of affairs as "that balls' sensorily appearing to me the way that red things would appear to me were I to now perceive their being red under an equal-energy illuminant". I say more about this in the next section.

phenomenal character: A "positive" (Masrour) or "narrow" (Beck) kind, which only includes the ways in which subjects are sensorily appeared to, and therefore excludes perceptual appearances; and an "ontic" (Masrour) or "broad" (Beck) kind, which includes both the ways in which subjects are sensorily appeared to, and the having of perceived elements (of any ontological category) sensorily appearing to subjects in such and such ways.[6] Since I am a phenomenal pluralist—and so have argued (2019b) that perceptual appearances are (aspects of) phenomenal character—I reject the inference myself.

Second, the objection makes the assumption that our ordinary empirical beliefs can be sensorily based only on (our enjoyings of) phenomenal characters ("Character as Basis" thesis). However, there seems to be nothing in either epistemological theory or epistemological practice that requires this assumption (see, e.g., Audi 1986; Korcz 1997; Neta 2019; Pryor 2014; Williamson 2000). Worse, the assumption arguably has counterexamples: Suppose your experience of a certain cravat, Cosmo, offers you some basis on which you form the belief, of Cosmo, that it is garish. Cosmo is then instantaneously replaced with its identical twin cravat, Rhapsody. Your experience of Rhapsody is introspectively indistinguishable from your past experience of Cosmo, so you suspect no switch. Nevertheless, you decide to reconsider the distribution of garishness in your surroundings. Happily, your experience of Rhapsody offers you some basis on which you now form the belief, of Rhapsody, that *it* is garish. In this case, your experience of Cosmo offers you something which serves as a basis for a belief about Cosmo, and which cannot serve as a basis for a belief about Rhapsody (as Rhapsody is not visible when you experience Cosmo). Similarly, your experience of Rhapsody offers you something which serves as a basis for a belief about Rhapsody, and which cannot serve as a basis for a belief about Cosmo (as Cosmo is not visible when you experience Rhapsody). Since the bases thus offered to you can serve as bases for distinct beliefs, the bases themselves must be distinct. Thus, anyone who holds that your experiences of Cosmo and Rhapsody have the *same* phenomenal character, must *deny* that our ordinary empirical beliefs can be sensorily based only on (our enjoyings of) phenomenal characters.

Third, and more constructively, the perceptual appearances strategy can accept that the phenomenal characters we enjoy do have a large and important role to play in the story of the sensory basing of beliefs.[7] Specifically, the perceptual appearances can suggest that when a subject enjoys a phenomenal character—and specifically, when a subject is sensorily appeared to in way W—the subject gains the ability to base beliefs not just on her being sensorily appeared to in way W, but also on her states of having perceived elements (of any ontological category) sensorily appear way W to her. Since these latter states—which include perceptual appearances—are states in which perceived elements sensorily *appear to the subject*, they make those elements available to the subject, so that she can take account of the elements, or sensitively respond to the elements, in the manners that belief-basing involves. So on this view, for example, your experience of Cosmo offers you something which serves as a basis for a belief about Cosmo (and which cannot serve as a basis for a belief about Rhapsody) because your Cosmo-experience involves *Cosmo's* (and not Rhapsody's) appearing some way to you. Likewise, your experience of Rhapsody offers you something which serves as a basis for a belief about Rhapsody (and which cannot serve as a basis for a belief about Cosmo) because your Rhapsody-experience involves *Rhapsody's* (and not Cosmo's) appearing some way to you. A slight generalization of this very idea can be put thus: When perceived elements (of any ontological category) sensorily appear ways to a subject, the states of their sensorily appearing those ways to the subject are included in the subject's

[6] For a closely related, yet importantly different, phenomenal pluralist view, see Nel Mehta (2024, chapter 10).

[7] There are views on which the phenomenal character of a sensory state is irrelevant to its potential to serve as a basis of belief (Berger 2020, Berger et al. 2018, Jenkin 2020, and Lyons 2009). I take these views to do violence to our intuitions. Consider, e.g., the *super-duper-blindsighter* case (Smithies 2012; 2019, inspired by Block 1995): Clara enjoys no visual appearances, but nevertheless, upon neurally processing unconscious visual information, judgments with perfectly ordinary contents just spontaneously and reliably pop into her head. Clara has no grounds for thinking that she has such a reliable process at her disposal. At this moment, Clara visually but unconsciously perceives a pig's being in the yard, and she judges that a pig is in the yard. Note that if Clara grounded her belief on her unconscious perception, her belief would be justified (in fact, it would presumably amount to knowledge). Intuitively, however, Clara's belief is not justified. It seems that it cannot be justified, since Clara has no conscious awareness of the pig's being in the yard. Therefore, intuition tells us that Clara cannot ground her belief in her perception.

phenomenal viewpoint on the world. As a result of their being included in this viewpoint, the subject is enabled not only to directly refer to (or think about) the sensorily appearing elements (Campbell 2002; 2010), but also to base beliefs on their sensorily appearing as they do (Johnston 2006; 2011, McDowell 1998; 2008; 2009).[8]

A different objection to the perceptual appearance strategy is that perceptual appearances are not Necessitating and that (Conclusive Perceptual Appearances) is false. This is precisely the objection I will be raising in the next section. But before I raise it, I wish to say why the perceptual appearances strategy takes perceptual appearances to be Necessitating to begin with. The core intuition here is that the ways individual objects appear to us in perceptions (unlike the ways they appear to in illusions) single out which properties (or property instantiations) we are perceiving. More precisely, the core intuition is that, necessarily, if individual objects sensorily appear W_F to S in a perception, then S perceives these object's being F. Now, necessarily, if S perceives certain individual object's being F, then those objects are F. Thus, (Conclusive Perceptual Appearances) follows.

3 Against the Perceptual Appearances Strategy

In this section I argue that (Conclusive Perceptual Appearances) is false by producing a counterexample.

A counterexample to (Conclusive Perceptual Appearances) is a case in which a perceived individual object o sensorily appears W_F to S in a perception, but o is not F. Applied to the case of colors (which is the case we shall be most directly concerned with), this would, e.g., be a case in which a perceived individual object o sensorily appears W_{red} to S in a perception, but o is not red. A difficulty in producing this case, however, is that I want to produce it without making burdensome assumptions about what the standard subject, time and conditions are (this will ensure maximal generality). Yet without such assumptions, it is difficult to show that the case produced is one in which o sensorily appears W_{red} to S, rather than W_{yellow}(say). Thankfully, there is a way of overcoming this difficulty. I will let W_R be the way that red things would sensorily appear to me, if I now perceived their being red under an equal-energy illuminant. (I explicitly do *not* assume that I am the standard subject, that now is the standard time, or that an equal-energy illuminant represents the standard conditions.) I will then produce two cases - one in which o sensorily appears W_R to S in a perception, and in which o is red; and another in which o equally sensorily appears W_R to S in a perception, but in which o is yellow. Then:

1. If the standard subject, time, and conditions are such that W_R is identical to W_{red}, then the *second* case will be a case in which o sensorily appears W_{red} to S in a perception, but in which o is yellow and so not red. This case will be a counterexample to (Conclusive Perceptual Appearances).

2. If the standard subject, time, and conditions are such that W_R is identical to W_{yellow}, the *first* case will be a case in which o sensorily appears W_{yellow} to S in a perception, but in which o is red and so not yellow. This case will be a counterexample to (Conclusive Perceptual Appearances).

3. If the standard subject, time, and conditions are such that W_R is identical to neither W_{red} nor W_{yellow}, then $W_R$will be identical to the way that things of some other third color, X, would sensorily appear to the standard subject, if the standard subject perceived their being X at the standard time and under the standard conditions (i.e., to $W_R$will be identical to W_X). Then, my *first* case will be a case in which o sensorily appears W_X to S in a perception, but in which o is red and so not X; and my second case will be a case in which o sensorily

[8]For more on the notion of the subject's phenomenal viewpoint on the world, see Martin's (1998, p. 173; 2002a, p. 194; 2006, pp. 393-394) and my (2019b). Even if one rejects both Martin's identification of phenomenal viewpoints on the world with the sensory phenomenology, and phenomenal particularism in general, one can retain the idea that a perceived element's being included in the subject's phenomenal viewpoint on the world enables the subject to directly refer to (or think about) the element and to base beliefs on appropriate bases that are partly constituted by it. In fact, I read Schellenberg (2010; 2013a; 2016a; 2016b; 2018) as a phenomenal generalist of just this kind.

appears W_X to S in a perception, but in which o is yellow and so not X. Both cases will be counterexamples to (Conclusive Perceptual Appearances).

In this way, (Conclusive Perceptual Appearances) will be refuted regardless of what W_R is.[9] A potentially simpler way of making the same point is this: By producing two cases, in both of which o sensorily appears W_R to S in a perception, but in each of which o has a color incompatible with the one it has in the other case, I will have shown that o's sensorily appearing W_R to S in a perception does not necessitate o to be any single color. But if o's sensorily appearing W_R to S in a perception does not necessitate o to be any single color, (Conclusive Perceptual Appearances) is false.[10]

Since my argument will be long, I divide it into two parts. In the first part, I describe a case in which o sensorily appears W_R to S, and in which o is red. I then offer two sub-arguments (one "from Speciesism" and one "from Perception's Functional Aspects") that in the described case, o sensorily appears W_R to S *in a perception*, thus establishing that I have produced the first of the two cases described in the previous paragraph. In the second part, I describe a different case in which o sensorily appears W_R to S, but in which o is yellow. I then again offer two sub-arguments that in the new case, o sensorily appears W_R to S *in a perception*, thus establishing that I have produced the second of the two cases described in the previous paragraph.

Let's begin. Consider:

> *Grand Interworld Station (part 1).* You and a few of your friends are the human delegation to the Grand Interworld Station's space travelers' summit. The other delegations are already there when you arrive, and you join them at the conference hall as you get off your spaceship. Once in the hall, you all take a good look at Bounce - a well illuminated red ball that is lying around. Owing to your experience, you judge that the ball (i.e., Bounce) is red. Everyone on the station agrees. Interestingly, however, Bounce appears different ways to the members of the different delegations. To explain these differences, let W_R be the way that red things would sensorily appear to me, if I now perceived their being red under an equal-energy illuminant. Similarly, let W_G, W_B and W_Y respectively be the ways that green, blue and yellow things would sensorily appear to me, if I now perceived their being green, blue or yellow under an equal-energy illuminant. Now, the main difference in how colored things appear to the different delegations are listed in table 1.

	To humans	**To Venutians**	**To Martians**	**To Alpha-centaurians**
red things	appear W_R	appear W_G	appear W_B	appear W_Y
yellow things	appear W_Y	appear W_B	appear W_G	appear W_R
green things	appear W_G	appear W_R	appear W_Y	appear W_B
blue things	appear W_B	appear W_Y	appear W_R	appear W_G

Table 1: *Color Inversion*

[9] W_R is not identical to both W_{red} and W_{yellow}, since W_{red} and W_{yellow} are distinct. They are distinct since on any remotely plausible choice of standard subject, time and conditions, red things and yellow things would not sensorily appear the same way to the standard subject, if the standard subject perceived each at the standard time and under the standard conditions.

[10] My argument is inspired by some wonderful cases discussed by Bergmann (2004), Markie (2004), Tucker (2010), and especially Lyons (2013). Despite many similarities with these other cases, my counterexample differs substantially from them. The reason is that the other cases were tailored to discuss experiential justification in general, whereas I am more narrowly concerned with conclusive perception-related basing.

But if Bounce appears W_R to the humans, W_G to the Venutians, W_B to the Martians and W_Y to the Alpha-centaurians, how do they all end up agreeing that Bounce is red? The answer is simple. Every member of every delegation judges that Bounce is red spontaneously, and on the basis of her own experience of it, given the way Bounce appears to her. None of the delegates access their background knowledge or beliefs before they judge. In so doing, they each conduct themselves just as their conspecifics on their respective home planets have done for centuries. Well illuminated red balls have always appeared W_R to the humans, and the humans have always responded to such appearances by spontaneously and immediately judging the balls to be red. Similarly, well illuminated red balls have always appeared W_G to the Venutians, and the Venutians have always responded to such appearances by spontaneously and immediately judging the balls to be red. Mutatis mutandis for the other species.

Back at the Grand Interworld Station's conference hall, word quickly spreads that the ball appears different ways to the different delegation members. One of the delegates, a human epistemologist, stands up. "Friends", she says, "it seems that we all believe that the ball is red. Nevertheless, I am afraid my professional honor forces me to let you know that only the members of the human delegations have *conclusive basis* for this belief. This is quite obvious, really. After all, us humans are the only ones to whom the red ball appears red. So we are the only ones to whom the ball appears the way that it truly is. As a result, us humans are the only ones who perceive the ball's being red, and the only ones who enjoy a perceptual appearance of the ball. None of you are quite as fortunate as us humans. To the rest of you, the red ball appears non-red. So to you, the ball appears a way that it is not. As a result, all your experiences of the ball are illusions rather than perceptions, and the appearances you have of the ball are non-perceptual appearances. This asymmetry between us humans and the rest of you has a striking epistemological consequences: Since we have a perceptual color appearance of the ball, we have a conclusive basis for believing that the ball is red. You, on the other hand, do not have a perceptual color appearance of the ball. So you probably lack conclusive basis for believing anything about its color."

Quite disturbed by this human speech, a Martian epistemologist then takes the floor. "I'm afraid my learned human friend must be confused", she declares. "The humans here believe that the red ball appears red to them. But as we all know, the ball appears W_R to the humans. To our minds, W_R is the way that well illuminated *blue* things standardly appear. So we think that the red ball appears not red but blue to the humans. Consequently, the humans have not have perceptual color appearances of the ball. They are no less under an illusion than the Alpha-centaurians or Venutians. Furthermore, if anyone here has conclusive grounds for believing that the ball is red, it is us Martians. The red ball appears W_B to us, which to our minds is the way that well illuminated red things standardly appear. So we are the ones to whom the red ball appears red. Since the ball appears to us just the color that it is, it is us who enjoy perceptual color appearances of the ball."

After a moment's reflection, a Venutian epistemologist opens up. "Friends, let us not carry on debating to whom the ball appears its true color. To *each* of our delegations it reasonably seems that its members are the ones, and the only ones, to whom the ball appears its true color. How are we to objectively decide who's right? We might have been able to decide on an answer if one of us were generally superior or more capable than the rest of us in her general handling of colors. But this not the case. All of us generally agree about the colors of things, and in other ways too we all interact with the colors of things in roughly the same manner. Indeed, even if us Venutians are somewhat better than the rest of you in drawing distinctions among some fine-grained shades of red, the humans are somewhat superior at distinguishing fine-grained shades of green, the Martians are best with the yellows, and the Alpha-

> centaurians are ahead with the reds. On the whole, we are all on a par when it comes to our responses to color. Given this, we must conclude that there is simply no way of objectively deciding to whom the ball appears its true color.
>
> "What are we to do with this realization?", the Venutian continues. "Should we say that there is some deep unknowable mystery here about which of us is perceiving, and which under an illusion? Should we say that there is some deep unknowable mystery here about which of us is having perceptual appearances when looking at the ball, and which of us is having non-perceptual appearances? No, such claims would surely be absurd. The only reasonable view to take is that Nature has just designed us such that colors and color appearances are associated differently across our delegations. None of these associations is truer, better, or more appropriate than the others. Therefore, if members of one of the delegations here perceive the ball's being red, then members of all the delegations here perceive the ball's being red. Furthermore, if one of the color appearances enjoyed on this station when looking at the ball is a perceptual appearance, than all of them are perceptual appearances.
>
> "This", the Venutian adds, "brings me to my bottom line: I think it is undeniable that at least *one* of us is perceiving the ball's being red. I also think it undeniable that the color appearances enjoyed by at least *one* of us when looking at the ball are perceptual appearances. So, given my previous argument (that if one of us is onto the ball's color, then all of us are onto it), I think that *all* of us perceive the ball's being red. Furthermore, *all* the appearances we are enjoying when looking at the ball are perceptual appearances. And, more importantly, you should agree with me on this! Why? Well, consider things from your own perspectives: The red ball appears to each of you just as red things have standardly appeared to you and to generations of your conspecifics before you. Additionally, the balls' appearing to each of you as it does enables each of you to judge—spontaneously, immediately, and in a non-accidentally correct way—that the ball is red, again in accordance with the centuries-old practice of your conspecifics. So, each of you should judge that you perceive the ball's being red, and that the appearance you enjoy of the ball is a perceptual appearance."

I think that the Venutian epistemologist is right. In fact, I think her ideas can be reconstructed as two arguments for the conclusion that *all* the space travelers are enjoying perceptual color appearances when looking at Bounce.

Argument from Speciesism. The humans and the other space-travelers are broadly alike in their abilities to experientially recognize and discriminate colors; and they substantially differ from each other only in the ways that colored things appear to them. Under such conditions, it would be brute and unmotivated speciesism to hold that one of the species on the station is perceiving while the others are suffering illusions. Assuming, then, that we must not hold that one of the species on the station is perceiving while the others are suffering illusions, the options before us seem to be just these: (A) accept that all the space travelers are enjoying perceptual color appearances when looking at Bounce, (B) accept that none of them are, or (C) insist that some space traveling species are enjoying perceptual color appearances when looking at Bounce while the others are not, but add that it is unknowable which species are which. Of these options, (C) is the least appealing. First, there is simply no independent motivation or plausibility to the view that it is unknowable which of the species on the Grand Interworld Station is perceiving and which is not. Second, option (C) does not even have the benefit of ultimately avoiding speciesism, since it still says that some space traveling species are perceiving while the others are not. Option (B) is also unappealing. Color eliminitivists (e.g., Hardin 1988, Boghossian and Velleman 1989; 1991) might be happy to say that everybody on the Grand Interworld Station is suffering an illusory color appearance when looking at Bounce, but that is because they generally think that ordinary objects (including Bounce) have no colors. In any case, the trouble with eliminitivism is that it constitutes a radical error theory on which (i) our color experiences are systematically misleading, (ii) our

commonplace beliefs about the colors of objects (e.g., that strawberries are red, that grass is green, etc.) are systematically untrue, (iii) there is no obvious explanation for the evolution of color perception, and (iv) the evolution of our perceptual color-constancy mechanisms appears particularly bizarre, as there are no distal colors about which information might be extracted from proximal light stimuli.[11] Once we set eliminitivism aside, however, there seems to be no reason to deny that some possible species could perceive Bounce's color if placed on the station. If this were granted, however, we could run the Grand Interworld Station scenario again, only now with the new possible species added in. We would get the same dilemma of speciesism again, but this time the option of saying that none of the species on the station are perceiving would be unavailable. With options (B) and (C) thus eliminated, option (A) is the one to embrace.[12]

[A final note: Readers who still find themselves attracted to color eliminitivism, might run my whole argument against (Conclusive Perceptual Appearances) not with respect to color, but with respect to a property which is less easily eliminated. An example would be spatial orientation. We could, e.g., have an inversion scenario in which a scene, which all space travelers agree is un-rotated along the plane perpendicular to head-on, appears to the Martians the way in which a scene that is rotated n degrees clockwise along the same plane appears to the humans (and similarly for the other species). We would then need to argue, in the same way as is pursued here, that the scenario can be further articulated so as to establish the possibility of a case in which a perceived individual object o in the scene sensorily appears $W_{n\text{-}degree\text{-}rotated}$ to S in a perception, although o is un-rotated.]

Argument from Perception's Functional Aspects. The experimental practices of perceptual psychology presuppose that there are broadly functional sufficient conditions for perception. Perceptual psychology tests for the perception of various kinds of items by finding mechanisms by which such items are tracked, and by showing how the tracking contributes to the perceivers' abilities to perform tasks that perceivers of these items can distinctively perform for the advancement of their goals.[13] Though the details of color perception are still not fully understood, perceptual psychology has had significant successes in explaining color perception by these means. Perceptual psychology's successful strategy suggests that we can give broadly functional sufficient conditions for color perception.[14] A rough approximation of one such sufficient condition is:

(Color) S visually perceives o's being color C if (i) o is C, (ii) S perceives o, (iii) S's perception of o is facilitated by S's visual perception system's exhibiting a post-receptoral neural response pattern of a type that tracks objects' being C, and (iv) that post-receptoral neural response pattern causally enables S to (a) discriminate between o and nearby objects and areas that are different but similar in color to o, (b) attend to o's color as opposed to the different but similar colors of objects and areas near to o, (c) visually guide various actions on the area of o that is C (e.g., tracing it by hand), and (d) visually recognize that o is C—all in the service of S's goals.[15]

Since the antecedent of (Color)—and of any reasonably tweaked scientifically plausible version thereof—only refers to the subject's psycho-functional organization and not to her appearances, we are free to stipulate that its antecedent is satisfied by all the space traveled on the station. More explicitly, we can stipulate that all those on the station (i) perceive Bounce, (ii) their perception of Bounce is facilitated by their visual perception systems' exhibiting a post-receptoral neural response pattern which tracks objects' being red, and (iii) that post-receptoral neural response

[11] For further discussions, see the excellent essays in part IV of Brown and Macpherson (2021).

[12] Chalmers (2010) holds that objects in our world do not have "Edenic colors", which are properties whose intrinsic natures we grasp simply by having color experiences. However, he distinguishes between these Edenic colors and regular colors, and insists that objects in our worlds do have regular colors, which that we can perceive. My color cases concern Chalmers' regular colors, and I hope to establish by them that when F is some *regular* color, a perceived individual object o can sensorily appear W_F to S in a perception although o is not F. I do not take Chalmers to be a color eliminitivist.

[13] See Marr (1982) and Palmer (1999b).

[14] See Brouwer and Heeger (2013), Conway et al. (2010), and MacAdam (1985).

[15] A similar condition could also be produced with respect to the perception of spatial orientation.

pattern causally enables them to (a) discriminate between Bounce and nearby objects and areas that are differently but similar in color to Bounce, (b) attend to Bounce's color as opposed to the different but similar colors of objects and areas near to Bounce, (c) visually guide various actions on the area of Bounce that is red, and (d) visually recognize that Bounce is red—all in the service of their goals. Given these stipulations, we can deduce from (Color) that all space travelers are perceiving Bounce's being red and therefore are enjoying perceptual color appearances when looking at it.

Having twice argued that all the space travelers (including you!) are enjoying perceptual color appearances when looking at Bounce, let's draw the following trivial conclusion:

(Red can appear W_R) Bounce sensorily appears W_R to you in a perception, and Bounce is red.

This completes the first part of the argument. All that remains is to produce a case in which Bounce equally sensorily appears W_R to you in a perception, but in which Bounce is yellow. This is the topic of the argument's second part:

> *Grand Interworld Station (part 2).* Inspired by the Venutian epistemologist's speech (which, incidentally, persuades everyone), you decide to "go Alpha-centaurian": You hop back onto your spaceship, travel back to Earth, and install in yourself a device that has the following effect on you: Things that all delegations would agree are yellow appear W_R to you, and you respond to such appearances by spontaneously and immediately judging the things that so appear to you to be yellow. Analogous further changes also occur for the other colors. The net effect of these changes is that you experience colors, and respond to those experiences, just as the Alpha-centaurians have done for generations.
>
> Fifty years go by, and one day you receive an invitation to attend a space travelers' summit reunion on the Grand Interworld Station. When you arrive at the station, Bounce is still there, and it is still well-illuminated. But its color has faded: Bounce is yellow now. So when you and your Alpha-centaurian colleagues look at Bounce, and it appears W_R to all of you. You and they also respond to its so appearing by spontaneously and immediately judging that it is yellow. Your reunion buddies from Mars and Venus agree: Bounce appears, respectively, W_G and W_B to them, and they respond to its so appearing by spontaneously and immediately judging that it is yellow.

I argue that the color appearance you enjoy while looking at Bounce is a perceptual color appearance. My arguments mirror those I presented earlier: First, when you arrive at the space travelers' summit reunion, your have been interacting with color as an Alpha-centaurian for fifty years. During all these years, colored things have been appearing to you as they would appear to an Alpha-centaurian; and you have been responding to such appearances by judging those things to be the colors that an Alpha-centaurian (as well as everyone else on the Grand Interworld Station) would judge them to be. Furthermore, you have been producing these judgments in just the spontaneous and immediate way that an Alpha-centaurian would produce them. Finally, all these things are true of you because you explicitly decided to make them true. Given all this, it would be objectionably speciesist if we did not regard the color appearance you enjoy while looking at Bounce as we would regard similar appearances of an Alpha-centaurian. But by the arguments made in part 1 of this scenario, we should regard a similar appearance of an Alpha-centaurian as a perception. So we should say the same of you; i.e., we should say that the color appearance you enjoy while looking at Bounce is a perceptual color appearance. Second, we can just stipulate that in your second visit to the Grand Interworld Station, you satisfy (Color)'s antecedent. But given (Color), this entails that you are perceiving Bounce's being yellow and therefore are enjoying perceptual color appearances when looking at it.

Note, however, that the conclusion of the two last arguments suggests that

(Yellow can appear W_R) Bounce sensorily appears W_R to you in a perception, and Bounce is yellow.

We now have all that we need refute (Conclusive Perceptual Appearances). Together (Red can appear W_R) and (Yellow can appear W_R) show that we have produced two cases, in both of which Bounce sensorily appears W_R to you in a perception, but in each of which Bounce has a color incompatible with the one it has in the other case. This shows that Bounce's sensorily appearing W_R to you in a perception does not necessitate Bounce to be any single color. But if Bounce's sensorily appearing W_R to you in a perception does not necessitate Bounce to be any single color, (Conclusive Perceptual Appearances) is false.

4 Objections and Replies

Objection 1. "*Any experience's color phenomenology metaphysically supervenes on the color property that is tracked by tokens of the experience's neural type. Now, in your Grand Interworld Station scenario, when any of the space travelers sees something red, that space traveler has an experience of a neural type whose tokens track the color red. Therefore, in your Grand Interworld Station scenario, any two space travelers who see something red have experiences with the same color phenomenology. This contradicts the scenario's stipulations that some of the space travelers are spectrum inverted relative to each other. So your Grand Interworld Station scenario is impossible.*"[16]

Reply. As I mentioned in the introduction, arguments by Pautz (2011; 2014; 2017), Block (2010; 2007c) and Masrour (2015; 2017), defended in my (2019a; 2022), suggest to me that the ways we are sensorily appeared to metaphysically supervene on our own intrinsic properties. In view of this, the objection is question begging in the present dialectical context.

Objection 2. "*Scenarios in which representationally, functionally, or behaviorally identical subjects are spectrum inverted relative to each other are incoherent, or at least metaphysically impossible. Your Grand Interworld Station scenario is just such a scenario. So we should not worry too much about it.*"

Reply. It is indeed a commonly held view that spectrum inversions can occur only among subjects who are representationally, functionally, or behaviorally different from each other.[17] Perhaps this view is correct, perhaps not.[18] Whatever one makes of it, however, the view is no threat to the coherence of metaphysical possibility of the Grand Interworld Station scenario. The scenario is simply compatible with the view (and with its negation).

The ultimate reason that the scenario is compatible with the view above, is that the space of human color experiences (i.e., human color phenomenology space) is asymmetric, so that color inverted human subjects would make somewhat different discriminations along the full spectrum of color stimuli.[19] In the Grand Interworld scenario, the same asymmetric color experience space is assumed to apply to subjects of all species. The effect of this is that inverted subjects, even if they belong to different species, differ in their fine-grained color discriminations.[20] As a result, the subjects of the different species are both functionally and behaviorally different from each other. So the scenario is in no conflict with the view that spectrum inversions can occur only among functionally or behaviorally different subjects. Furthermore, since the inverted subjects are both functionally and behaviorally different, there is no obvious obstacle to views on which they also differ representationally. For instance, they may differ representationally in representing different appearance properties (Shoemaker 1994; 2000; 2006), different centering features (Egan 2006), different "Edenic colors" (Chalmers 2010), or even in representing the *same* colors, but

[16] See, e.g., Tye (1995; 2000; 2009).

[17] For arguments, see Broackes (2007), Dennett (1988; 1991), Hardin (1997), Harrison (1973), Hilbert and Kalderon (2000), Myin (2001), and Stalnaker (1999; 2006).

[18] For doubts, see Block (1990; 2007a; 2007b; 2007d).

[19] For some details, see Block (2007d), Broackes (2007), Hilbert and Kalderon (2000), and Palmer (1999a).

[20] The scenario briefly alludes to this when the Venutian epistemologist's remarks that "even if us Venutians are somewhat better than the rest of you in drawing distinctions among some fine-grained shades of red, the humans are somewhat superior at distinguishing fine-grained shades of green…"

in different modes (Burge 2003). For this reason, the scenario is in no conflict with the view that spectrum inversions can occur only among representationally different subjects. The general take home message here is that the Grand Interworld Station scenario differs from other inversion scenarios in that it is *not* meant to be an argument against represenationalist or functionalist accounts of color phenomenology. Instead, it is merely an argument that the (Conclusive Perceptual Appearances) thesis is false, and that a single perceptual appearance can be involved in perceptions of distinct colors.

Objection 3. "Suppose you are looking at Bounce as you keep switching your color inverting device (the one you mention in part 2 of your scenario) on and off. This will have the effect that Bounce will constantly 'flip' from appearing W_R to you to appearing W_Y to you. Now ask yourself - how would Bounce appear to you with respect to color? The answer is trivial: Bounce's color would appear to change! Therefore, if it appears yellow to you when the device is off, it appears some non-yellow color to you when the device is on; and if it appears yellow to you when the device is on, it appears some non-yellow color to you when the device is off. Either way, Bounce does not appear yellow to you in both device settings. And this is a problem for your argument. After all, if Bounce is yellow, but in some device setting it appears some non-yellow color to you, then in that device setting you are having an experience in which Bounce looks to you a color that it is not. It follows that your experience of Bounce (when you are in the relevant device setting) is not a perception. Rather, it is an illusion. So, in contradiction to your whole line of argument, it is not the case that you have produced two cases both of which involve perceptual *appearances."*[21]

Reply. I believe this objection goes wrong twice: First, it goes wrong in suggesting that switching the color inverting device on and off would make Bounce's color appear to change. Second, it goes wrong in suggesting that the truth of "in experience *e*, Bounce looks to you a color that it is not" entails the truth of "*e* is not a perception". I'll take these in order.

The phenomenal effects of switching the color inverting device on and off need not be considered in an entirely hypothetical way. Consider this instructive real life case: Many years ago, Hilary Putnam asked me stop and look at a wall on the Tel-Aviv beach promenade, first only with my right eye, and then only with my left. Hilary said that when he looks at the wall in that way, he finds that the wall appears a bit yellower through one of his eyes than through the other. He added that despite this, he is under no illusion that the wall is changing colors.[22] Hilary asked me if I found my own experiences to be similar. To my astonishment, I did. When I looked at the wall through one eye it appeared fractionally yellower to me than through the other, but I was under no illusion that the wall was changing its shade. What we both felt, then, was this: As we switched from one eye to the other, it seemed to us that the wall's color was fixed and unchanging. It also seemed to us that everything else we were looking at was fixed and unchanging. In fact, the only change that seemed to us to occur was a change *in us*. Specifically, it seemed to us that there were changes in the ways that the wall's fixed and unchanging color appeared to us. (I recommend the reader try this experiment out for herself. It's fun.)

I believe that an analogous thing would happen to you if, in the Grand Interworld scenario, you switched the color inverting device on and off. After all, with the device off, Bounce would appear W_Y to you, and you would respond to such appearances by spontaneously and immediately judging it to be yellow. With the device on, Bounce would appear W_R to you, and you would equally respond to such appearances by spontaneously and immediately judging it to be yellow. Given this, it would seem to you that Bounce's color is fixed and unchanging, just as the wall seemed to Hilary and me. And as was the case with Hilary and me, it would seem to you that the only change that is occurring is a change *in yourself*. Specifically, it will seem to you that there are changes in the ways that Bounce's fixed and unchanging color appears *to you*. This is important, since if the only appearance of change is an

[21] This objection is inspired by Byrne and Hilbert (1997), and Speaks (2011). I am also very grateful to Adam Pautz and Matt Soteriou for discussions of this matter.

[22] Apparently, Hilary made similar points to lots of people. See Block (2007d, p. 88).

appearance of change in you rather than in Bounce, there is no reason to worry that any of the experiences you have of Bounce mischaracterize it and are therefore defective. Instead, we can regard all the experiences as adequately (and so, non-defectively) reflecting a real change that you are undergoing.

I now turn to the question of the inference from "in experience *e*, Bounce looks to you a color that it is not" to "*e* is not a perception". The goodness of this inference depends on the meaning of "in experience *e*, Bounce looks to you a color that it is not". To explore our options, let's denote the meaning of the last sentence as "*p*". The proposition that *p* might be lots of things. It might, e.g., be the proposition that for some color *F*, Bounce is not *F*, although in experience *e*, Bounce appears to you in a way that inclines you to treat it as *F* things are normally treated. This proposition entails that *e* is a defective experience, since it says that *e* inclines you to treat Bounce abnormally. But the proposition that *p* might also be different. It might, e.g., be the proposition that for some color *F*, Bounce is not *F*, although in *e*, Bounce appears to you in the way that *F* things would appear to the standard subject if the standard subject perceived their being *F* at the standard time and under the standard conditions. This proposition does *not* entail that *e* is a defective experience. The fact that a non-*F* appears to you the way that an *F* would appear to the standard subject does not entail any defect in *e*; especially since there is no non-arbitrary and non-speciesist way to choose who the standard subject is. The bottom line is that there are many things the proposition that *p* might reasonably be; some of which entail that *e* is defective, others not.[23]

Whether the proposition that *p* entails that *e* is defective or not is critically important for deciding if *e* is a perception (as opposed to an illusion or hallucination). This is because non-defective (sensory) experiences are all perceptions. By way of an argument for this last claim, note that if it were false, there could be non-defective non-perceptions. But non-defective non-perceptions are implausible critters, since they would make the distinction between the non-defective perceptions and the non-defective non-perceptions objectionably arbitrary. For example, during my stroll with Hilary, neither my left- nor my right-eyed experience of the wall's color were defective. It would therefore be objectionably arbitrary to take one of these experiences to be a perception of the wall's color, and the other to be a non-perception. The conclusion, then, is to let both be perceptions; just as the principle suggests. (I hasten to add that it is absurd to say that both my one-eyed experiences of the wall's color were non-perceptions, since each of them could easily have been identical to a two-eyed experience I might have had of the wall's color.)

Now consider your experiences as you switch the color inverting device on and off. In both settings, your experiences satisfy (Color)'s sufficient conditions for perceiving Bounce's being the color that it is. Nothing has been suggested to be defective about any of them. Therefore, all these experiences are non-defective, and thus all are perceptions. Furthermore, if "in experience *e*, Bounce looks to you a color that it is not" entails that *e* is defective, then "in experience *e*, Bounce looks to you a color that it is not" must be false of all the experiences you have as you switch the device on and off. Alternatively, if "in experience *e*, Bounce looks to you a color that it is not" does *not* entail that *e* is defective, then it also does not entail that *e* is not a perception.

Objection 4. "I think that the property of being appeared to in a W_R way is necessarily bundled with a single color property of distal objects. If Bounce has that property, its appearing W_R to me is something that happens in a perception. If Bounce does not have that property, its appearing W_R to me is something that happens in a non-perception. So I think it is necessarily the case that at least one of the two cases you produced in your argument does not involve a perceptual *appearance."*[24]

Reply. As I already noted, broadly empirical arguments suggest that properties of being appeared to in such and such ways (including the property of being appearing to in a W_R way) metaphysically supervene on our own intrinsic properties. Therefore, if the property of being appeared to in a W_R way *were* necessarily bundled with a

[23] I am here avoiding the notorious quagmire which is the meaning of appearance sentences. Those who are less timid than me might consult Breckenridge (2018; 2021), Chisholm (1957), Jackson (1977), Martin (2010) and Travis (2013).

[24] I am very grateful to Farid Masrour for a discussion of this objection.

color property of distal objects, then the intrinsic properties of subjects would be necessarily bundled with properties of distal objects. But that cannot be. Properties of distal objects are one thing, the intrinsic properties of subjects are another. They are distinct existences. Therefore, to suggest that they are necessarily bundled together is fiction. For what would determine which property of distal objects is bundled with a given intrinsic property? If the bundling were accidental, established by virtue of some tracking relation of the kind mentioned in the (Color) thesis above, there would be an answer to this question. But if the bundling is a necessary bundling of distinct existences, there is no explaining it. Insisting that it nevertheless exists is to indulge in the advantages of theft over honest toil.

Objection 5. "Part 1 in your scenario suggests that the humans, Venutians, Martians and Alpha-centaurians all believe Bounce to be red. But that makes no sense. At best, it makes sense to say that the humans, Venutians, Martians and Alpha-centaurians are willing to point to Bounce as they utter the words 'that ball is red'. But it makes no sense to say that they are uttering those words in expression of a common belief. The reason for this is that (setting aside level of determinacy complications) there is a canonical 1-to-1 mapping f(·) *from ways of appearing to subjects to distal colors, such that if* S*'s belief about an object's color is based on the object's appearing a certain way* W *to* S*, then* S*'s belief represents the object to be the color* f(W)*. Now, since the mapping is 1-to-1, and since Bounce appears multiple ways to the different species, the different species end up believing that it is different colors. There is no one color they all believe Bounce to be."*

Reply. If we add a few stipulations to our scenario, we'll be able to see that this objection is extremely implausible. Specifically, let's stipulate that for any subject S aboard the Grand Interworld Station there is a color concept C such that (i) C is the concept that S deploys (in part 1 of the scenario) to attribute a color property to the ball, (ii) S in general deploys C in a manner that 'tracks' nothing but instantiations of red, (iii) whenever S receives undefeated non-experiential information suggesting that x is red (e.g., someone tells her that x is red, or she discovers that x's spectral surface reflectance profile necessitates its being red), she forms a belief in which the concept C is deployed to attribute the property it represents to x, and (iv) S linguistically expresses the concept C by using a term which S's home linguistic community standardly uses to pick out the color red, and which she herself intends to use to pick out the color red. With this stipulated, it is highly intuitive that, for any subject S aboard the Grand Interworld Station, the property represented by S's concept C is the property of being red. After all, given the stipulation, if C represented any other color, then (i) S's experience-based beliefs deploying the concept C would be systematically false, (ii) S's non-experiential beliefs deploying the concept C would systematically violate the suggestions of her non-experiential information, and (iii) her expressions of those beliefs would systematically be misleading. On the other hand, if C represented being red, then (i) S's experience-based beliefs deploying the concept C would systematically be true, (ii) S's non-experiential beliefs deploying the concept C would systematically be rationally responsive to her non-experiential information, and (iii) her expressions of those beliefs would systematically be perspicuous. Therefore, for any subject S aboard the Grand Interworld Station it so happens that the best and most intuitive interpretation of S's concept C is an interpretation on which C represents the property of being red. This intuitive conclusion is also supported by the established tradition of externalist theories of conceptual representation that emerged from the seminal works of Putnam (1975), Burge (1979), Fodor (1992) and others.

5 An Alternative: The SoA Appearances Strategy

This section outlines an alternative way of defending (Conclusive), given our rejection of (Conclusive Perceptual Appearances). To build up to this alternative, let us start by considering why the perceptual appearances strategy failed.

The Achilles' heel of the perceptual appearances strategy is its assumption that, necessarily, if individual objects

sensorily appear W_F to S in a perception, then S perceives these object's being F. This assumption is false, since the ways that perceived elements sensorily appear to us do not determine (even when the elements appear to us in a perception) what perceptible properties these elements have. This undermines the claim that perceptual appearances are Necessitating mental state. The lesson is that as we try to defend (Conclusive) by searching for mental states that are simultaneously Base-able and Necessitating, we should not pick states whose being Necessitating depends on the ways that perceived elements appear to us. Ways that perceived elements appear to us may be involved in explaining why the states we chose are Base-able, but the story of their being Necessitating should be different.

In view of this lesson, I propose that the Base-able and Necessitating states we are looking for are "appearances of ordinary empirical states of affairs" (or "SoA appearances", for short). An ordinary empirical states of affairs is any state of affairs of the type *o's being F*, where F is any fairly determinate perceptible property and o are perceptible individual objects. An SoA appearance, in turn, is a subject's state of having an ordinary empirical state of affairs sensorily appearing some way to her. (E.g., a ball's being red sensorily appearing spherical and reddish to me is an appearance of state.) Note that in any SoA appearance, some ordinary empirical states of affairs sensorily appears some way to the subject. This requires the subject to consciously perceive the state of affairs, but it allows the state of affairs to sensorily appear to the subject in any way that is compatible with her perceiving the state. What the "SoA appearances strategy" (as I shall call it) says, then, is that if *o's being F* is an ordinary empirical state of affairs, then the following two hold:

(SoA Appearances as Basis) The ordinary empirical belief that o are F can be based on o's *being F's* sensorily appearing some way to S.

(Conclusive SoA Appearances) Necessarily, if o's *being F* sensorily appears some way to S, then o are F.

In support of (SoA Appearances as Basis), I offer essentially the same broadly relationalist line of thought that was offered above with respect to (Perceptual Appearances as Basis): When a subject enjoys a phenomenal character—and specifically, when a subject is sensorily appeared to in way W—the subject gains the ability to base beliefs not just on her being sensorily appeared to in way W, but also on her states of having perceived elements (of any ontological category) sensorily appear way W to her. Since these latter states—which include SoA appearances—are states in which perceived elements sensorily *appear to the subject*, they make those elements available to the subject, so that she can take account of the elements, or sensitively respond to the elements, in the manners that belief-basing involves. More broadly, when perceived elements (of any ontological category) sensorily appear ways to a subject, the states of their sensorily appearing those ways to the subject are included in the subject's phenomenal viewpoint on the world, with the result that the subject is enabled not only to directly refer to (or think about) the sensorily appearing elements (Campbell 2002; 2010), but also to base beliefs on their sensorily appearing as they do (Johnston 2006; 2011, McDowell 1998; 2008; 2009).

In support of (Conclusive SoA Appearances), I offer the simple thought that necessarily, if a state of affairs sensorily appears some way to S, then S perceives that state of affairs. Now, necessarily, if S perceives a state of affairs, that state of affairs obtains. Thus, (Conclusive SoA Appearances) follows.

To illustrate how the SoA appearances strategy handles the Grand Interworld Station scenario, recall that in part 1 of the scenario, the state of Bounce's being red sensorily appears W_R to you. Since in part 1 you are also set up to respond to W_R appearances by spontaneously and immediately judging the appearing individual objects to be red, you base the belief that Bounce is red on this SoA appearance. You thereby acquire a conclusively based belief that Bounce is red. Similarly, in part 2 of the scenario, the state of Bounce's being *yellow* sensorily appears W_R to you. Since in part 2 you are also set up to respond to W_R appearances by spontaneously and immediately judging the appearing individual objects to be *yellow*, you base the belief that Bounce is yellow on this SoA appearance. You

thereby acquire a conclusively based belief that Bounce is yellow.

The epistemological story, of course, does not end with this impressionistic sketch of how we can have *conclusively based* ordinary empirical beliefs. Most importantly, my sketch involves appeals to ways that subjects can be "set up", and which enable the subjects to spontaneously and immediately issue and base judgments on the potential bases available to them (which, I have argued, are their appearances of states). But I have said nothing about what the ways that subjects can be "set up" are, or about how they contribute to transforming a conclusively based judgment into a justified, or even knowledgeable, one. I wish to add a promissory note about these omissions.

My inclination is to say that *o's being F* can sensorily appear some way *W* to *S* (and so *S* may be in a mental state that could serve as a conclusive basis for the ordinary empirical belief that *o are F*), and yet *S* might fail to conclusively base the belief that *o* are *F* on her SoA appearance. This failure could be due to *S*'s having some misleading defeater, which *S* (being rational) minds. But the failure could also be due to *S*'s not possessing a certain capacity (a certain "set up"). In the simplest case, the missing capacity would be the capacity to recognize objects as being *F* on the basis of their being *F*'s sensorily appearing *W* to subjects.[25] Now, if *S* does have the last capacity, and furthermore, if *S* successfully and responsibly exercises it on her SoA appearance, then *S* will acquire conclusive knowledge of *o* that they are *F*. But, if *S*'s capacity fails to constitute a capacity to recognize because of reliability issues, if *S* exercises this capacity on an inappropriate appearance, or if the exercise is otherwise unsuccessful or irresponsible, then *S* may judge that *o* are *F* in a way that is irrational, unwarranted or otherwise problematic. This, at least, is a gesture at how I wish to fill in some of the aforementioned omissions. The details, however, will have to wait for another day. For now, let's just be happy that we can have conclusive bases for our ordinary empirical beliefs.[26]

[25] Cf. Austin (1970, pp. 79-80) and Miracchi (2015).

[26] *Question*: Suppose a creature is looking at a wall whose left half is green and whose right half is red. The creature perceives both halves having their respective colors, but while enjoying a uniform brown appearance. Would this creature have a basis on which to base the belief that the left half is green and that the right half is red? *Answer*: This is a difficult question. It is difficult because it is unclear whether the fact that the creature consciously perceives the left (right) half's being green (red) while enjoying a brown appearance entails that the left (right) half's being green (red) appears brown to the creature. If it does entail it, then the creature has an SoA appearance of the left (right) half's being green (red). In that case, the creature would have a basis on which to base the belief that the left (right) half is green (red). Of course, having that basis does not yet suggest that the creature could actually use it to form the belief that the left (right) half is green (red). Given the uniform brown appearance, it may still be the case that the creature cannot acquire or exercise a capacity to recognize the left (right) half as green (red) on the basis available. Alternatively, it may be that the fact that the creature consciously perceives the left (right) half's being green (red) while enjoying a brown appearance is compatible with the left (right) half's being green (red) not appearing brown to the creature. Perhaps the creature is enjoying some *conscious* perception in which both halves of the wall having their respective colors is *unconsciously* perceived (so that neither half's having its color appears any way at all to the creature) while other things (e.g., the entire wall's being thus and so shaped and located) appear various ways to the creature. In that case, the creature would not have a basis on which to base the belief that the left (right) half is green (red). I am very grateful to Farid Masrour for raising this question with me.

References

Allen, K. (2016). *A naive realist theory of colour*. Oxford University Press.

Alston, W. P. (1988). An internalist externalism. *Synthese*, *74*, 265–283.

Audi, R. (1986). Belief, reason, and inference. *Philosophical Topics*, *14*, 27–65.

Austin, J. L. (1962). *Sense and sensibilia*. Oxford University Press.

Austin, J. L. (1970). Other minds. In J. O. Urmson & G. J. Warnock (Eds.), *Philosophical papers* (2nd ed., pp. 76–116). Clarendon Press.

Beck, O. (2019a). Rethinking naive realism. *Philosophical Studies*, *176*, 607–633. https://doi.org/10.1007/s11098-018-1030-x

Beck, O. (2019b). Two conceptions of phenomenology. *Philosophers' Imprint*, *19*(37), 1–17.

Beck, O. (2022). Naive realism for unconscious perceptions. *Erkenntnis*, 1175–1190. https://doi.org/10.1007/s10670-020-00236-1

Berger, J. (2020). Perceptual consciousness plays no epistemic role. *Philosophical Issues*, *30*, 7–23. https://doi.org/10.1111/phis.12168

Berger, J., Nanay, B., & Quilty-Dunn, J. (2018). Unconscious perceptual justification. *Inquiry*, *61*, 569–589. https://doi.org/10.1080/0020174X.2018.1432413

Bergmann, M. (2004). Externalist justification without reliability. *Philosophical Issues*, *14*, 35–60.

Block, N. (1990). Inverted earth. *Philosophical Perspectives*, *4*, 53–79.

Block, N. (1995). On a confusion about a function of consciousness. *Behavioral and Brain Sciences*, *18*, 227–287.

Block, N. (2007a). Mental paint. *Consciousness, function and representation: Collected papers* (pp. 533–570). MIT Press.

Block, N. (2007b). Qualia. *Consciousness, function, and representation* (pp. 501–510). MIT Press.

Block, N. (2007c). Sexism, racism, ageism, and the nature of consciousness. *Consciousness, function, and representation* (pp. 571–601). MIT Press.

Block, N. (2007d). Wittgenstein and qualia. *Philosophical Perspectives*, *21*, 73–115.

Block, N. (2010). Attention and mental paint. *Philosophical Issues*, *20*, 23–63.

Boghossian, P. A., & Velleman, J. D. (1989). Colour as a secondary quality. *Mind*, *98*(389), 81–103.

Boghossian, P. A., & Velleman, J. D. (1991). Physicalist theories of color. *The Philosophical Review*, *100*(1), 67–106.

Breckenridge, W. (2018). *Visual experience - a semantic approach*. Oxford University Press.

Breckenridge, W. (2021). Colour experiences and 'looks' sentences. In D. H. Brown & F. Macpherson (Eds.), *The routledge handbook of philosophy of colour* (pp. 421–436). Routledge.

Brewer, B. (2018). Perceptual experience and empirical reason. *Analytic Philosophy*, *59*(1), 1–18.

Brewer, B. (2019). Empirical reason: Answers to Gupta, McDowell, and Siegel. *Philosophical Issues*, *29*(1), 366–377. https://doi.org/10.1111/phis.12160

Brewer, B., de Bruijn, D., Hill, C., Pautz, A., Rosenhagen, R., Vuletic, M., & Wu, W. (2018). Discussion of bill brewer's "perceptual experience and empirical reason". *Analytic Philosophy*, *59*(1), 19–32.

Broackes, J. (2007). Black and white and the inverted spectrum. *The Philosophical Quarterly*, *57*, 161–175.

Brouwer, G. J., & Heeger, D. J. (2013). Categorical clustering of the neural representation of color. *The Journal of Neuroscience*, *33*(39), 15454–15465. https://doi.org/10.1523/JNEUROSCI.2472-13.2013

Brown, D. H., & Macpherson, F. (Eds.). (2021). *The routledge handbook of philosophy of colour*. Routledge.

Burge, T. (1979). Individualism and the mental. *Midwest Studies in Philosophy*, *4*, 73–121.

Burge, T. (2003). Qualia and intentional content: Reply to Block. In M. Hahn & B. Ramberg (Eds.), *Reflections and replies - essays on the philosophy of tyler burge* (pp. 405–415). MIT Press.

Byrne, A., & Hilbert, D. R. (1997). Colors and reflectances. In A. Byrne & D. R. Hilbert (Eds.), *Readings on color* (pp. 263–288). MIT Press.

Campbell, J. (2002). *Reference and consciousness*. Oxford University Press.

Campbell, J. (2010). Demonstrative reference, the relational view of experience, and the proximality principle. In R. Jeshion (Ed.), *New essays on singular thought* (pp. 193–212). Oxford University Press.

Chalmers, D. J. (2010). Perception and the fall from Eden. *The character of consciousness* (pp. 381–454). Oxford University Press.

Chisholm, R. M. (1957). *Perceiving: A philosophical study*. Cornell University Press.

Conway, B. R., Chatterjee, S., Field, G. D., Horwitz, G. D., Johnson, E. N., Koida, K., & Mancuso, K. (2010). Advances in color science: From retina to behavior. *The Journal of Neuroscience*, *30*(45), 14955–14963.

Dennett, D. C. (1988). Quining qualia. In A. J. Marcel & E. E. Bisiach (Eds.), *Consciousness in contemporary science* (pp. 42–77). Oxford University Press.

Dennett, D. C. (1991). *Consciouness explained*. Back Bay books.

Egan, A. (2006). Appearance properties? *Nous*, *40*, 495–521.

Fish, W. (2009). *Perception, hallucination, and illusion*. Oxford University Press.

Fodor, J. A. (1992). A theory of content. *A theory of content and other essays*. MIT Press.

French, C., & Phillips, I. (2020). Austerity and illusion. *Philosophers' Imprint*, *20*(15), 1–19.

Genone, J. (2014). Appearance and illusion. *Mind*, *123*, 339–376. https://doi.org/10.1093/mind/fzu056

Genone, J. (2016). Recent work on naive realism. *American Philosophical Quarterly*, *53*, 1–26.

Gomes, A., & French, C. (2016). On the particularity of experience. *Philosophical Studies*, *173*, 451–460.

Hardin, C. L. (1988). *Color for philosophers*. Hackett Publishing Co.

Hardin, C. L. (1997). Reinventing the spectrum. In A. Byrne & D. R. Hilbert (Eds.), *Readings on color* (pp. 289–301). MIT Press.

Harrison, B. (1973). *Form and content*. Blackwell.

Hilbert, D. R., & Kalderon, M. E. (2000). Color and the inverted spectrum. In S. Davis (Ed.), *Color perception: Philosophical, psychological, artistic, and computational perspectives* (pp. 187–214). Oxford University Press.

Jackson, F. (1977). *Perception: A representative theory*. Cambridge University Press.

Jenkin, Z. (2020). The epistemic role of core cognition. *Philosophical Review*, *129*, 251–298.

Johnston, M. (2004). The obscure object of hallucination. *Philosophical Studies*, *120*, 113–183.

Johnston, M. (2006). Better than mere knowledge? The function of sensory awareness. In T. S. Gendler & J. Hawthorne (Eds.), *Perceptual experience* (pp. 260–290). Oxford University Press.

Johnston, M. (2011). On a neglected epistemic virtue. *Philosophical Issues*, *21*, 165–.

Korcz, K. A. (1997). Recent work on the basing relation. *American Philosophical Quarterly*, *34*, 171–191.

Korcz, K. A. (2015). The epistemic basing relation. In E. N. Zalta (Ed.), *The stanford encyclopedia of philosophy*. https://plato.stanford.edu/archives/fall2015/entries/basing-epistemic/

Logue, H. (2012). Why naive realism. *Proceedings of the Aristotelian Society*, *112*, 211–237.

Logue, H. (2017). Are perceptual experiences just representations? In B. Nanay (Ed.), *Current controversies in philosophy of perception* (pp. 43–56). Routledge.

Lyons, J. C. (2009). *Perception and basic beliefs*. Oxford University Press.

Lyons, J. C. (2013). Should reliabilists be worried about demon worlds? *Philosophy and Phenomenological Research*, *86*(1), 1–40.

MacAdam, D. L. (1985). The physical basis of color specification. Springer.

Markie, P. J. (2004). Nondoxastic perceptual evidence. *Philosophy and Phenomenological Research*, *68*, 530–553.

Marr, D. (1982). *Vision: A computational investigation into the human representation and processing of visual information*. W. H. Freeman.

Martin, M. G. F. (1998). Setting things before the mind. *Royal Institute of Philosophy Supplement*, *43*, 157–179.

Martin, M. G. F. (2002a). Particular thoughts and singular thought. In A. O'Hear (Ed.), *Logic, thought and language* (pp. 173–214). Cambridge University Press.

Martin, M. G. F. (2002b). The transparency of experience. *Mind & Language*, *17*, 376–425.

Martin, M. G. F. (2004). The limits of self-awareness. *Philosophical Studies*, *120*, 37–89.

Martin, M. G. F. (2006). On being alienated. In T. S. Gendler & J. Hawthorne (Eds.), *Perceptual experience* (pp. 354–410). Oxford University Press.

Martin, M. G. F. (2010). What's in a look. In B. Nanay (Ed.), *Perceiving the world* (pp. 160–225). Oxford University Press.

Masrour, F. (2015). The geometry of visual space and the nature of visual experience. *Philosophical Studies*, *172*, 1813–1832. https://doi.org/10.1007/s11098-014-0390-0

Masrour, F. (2017). Space perception, visual dissonance and the fate of standard representationalism. *Nous*, *51*, 565–593. https://doi.org/10.1111/nous.12139

Masrour, F. (2023). The Metaphysics of Sensory Experience, by David Papineau. *Mind*. https://doi.org/10.1093/mind/fzad004

McDowell, J. (1996). *Mind and world* (2nd ed.). Harvard University Press.

McDowell, J. (1998). Criteria, defeasibility, and knowledge. *Meaning, knowledge and reality* (pp. 369–394). Harvard University Press.

McDowell, J. (2008). The disjunctive conception of experience as material for a transcendental argument. In A. Haddock & F. Macpherson (Eds.), *Disjunctivism: Perception, action, knowledge* (pp. 376–389). Oxford University Press.

McDowell, J. (2009). The logical form of an intuition. *Having the world in view* (pp. 23–43). Harvard University Press.

McDowell, J. (2011). *Perception as a capacity for knowledge*. Marquette University Press.

McGrath, M. (2018). Looks and perceptual justification. *Philosophy and Phenomenological Research*, *96*, 110–133.

Mehta, N. [Neil]. (2014). The limited role of particulars in phenomenal experience. *The Journal of Philosophy*, *111*, 311–331.

Mehta, N. [Nel]. (2024). *A pluralist theory of perception*. MIT Press.

Miracchi, L. (2015). Competence to know. *Philosophical Studies*, *172*, 29–56.

Montague, M. (2016). *The given: Experience and its content*. Oxford University Press.

Myin, E. (2001). Color and the duplication assumption. *Synthese*, *129*, 61–77.

Neta, R. (2019). The basing relation. *Philosophical Review*, *128*(2), 179–217.

Palmer, S. E. (1999a). Color, consciousness, and the isomorphism constraint. *Behavioral and Brain Sciences*, *22*(6), 923–989.

Palmer, S. E. (1999b). *Vision science*. MIT Press.

Pautz, A. (2011). Can disjunctivists explain our access to the sensible world? *Philosophical Issues*, *21*, 384–433.

Pautz, A. (2014). The real trouble with phenomenal externalism: New empirical evidence for a brain-based theory of consciousness. In R. Brown (Ed.), *Consciousness inside and out: Phenomenology, neuroscience, and the nature of experience* (pp. 237–298). Springer.

Pautz, A. (2017). Experiences are representations: An empirical argument. In B. Nanay (Ed.), *Current controversies in philosophy of perception* (pp. 23–42). Routledge.

Plantinga, A. (2001). Direct acquaintance? In M. R. DePaul (Ed.), *Resurrecting old-fashioned foundationalism* (pp. 59–65). Rowman & Littlefield.

Pryor, J. (2001). Highlights of recent epistemology. *The British Journal for the Philosophy of Science*, *52*(1), 95–124.

Pryor, J. (2014). There is immediate justification. In M. Steup, J. Turri, & E. Sosa (Eds.), *Contemporary debates in epistemology* (2nd ed., pp. 202–222). Wiley-Blackwell.

Putnam, H. (1975). The meaning of 'meaning'. *Mind, language and reality: Philosophical papers*. Cambridge University Press.

Schellenberg, S. (2010). The particularity and phenomenology of perceptual experience. *Philosophical Studies*, *149*, 19–48.

Schellenberg, S. (2013a). Experience and evidence. *Mind*, *122*, 699–747.

Schellenberg, S. (2013b). Perceptual content and relations. *Philosophical Studies*, *163*, 49–55.

Schellenberg, S. (2016a). Perceptual particularity. *Philosophy and Phenomenological Research*, *93*, 25–54.

Schellenberg, S. (2016b). Phenomenal evidence and factive evidence. *Philosophical Studies*, *173*, 875–896.

Schellenberg, S. (2018). *The unity of perception - content, consciousness, evidence*. Oxford University Press.

Sethi, U. (2020). Sensible over-determination. *The Philosophical Quarterly*, *70*, 588–616. https://doi.org/10.1093/pq/pqz077

Shoemaker, S. (1994). Phenomenal character. *Nous*, *28*(1), 21–38.

Shoemaker, S. (2000). Phenomenal character revisited. *Philosophy and Phenomenological Research*, *60*(2), 465–467. http://www.jstor.org/stable/2653497

Shoemaker, S. (2006). On the ways things appear. In T. S. Gendler & J. Hawthorne (Eds.), *Perceptual experience* (pp. 461–480). Oxford University Press.

Smithies, D. (2012). The mental lives of zombies. *Philosophical Perspectives*, *26*, 343–372.

Smithies, D. (2019). *The epistemic role of consciousness*. Oxford University Press.

Snowdon, P. (1990). The objects of perceptual experience. *Proceedings of the Aristotelian Society*, *64*, 121–150.

Speaks, J. (2011). Spectrum inversion without a difference in representation is impossible. *Philosophical Studies*, *156*, 339–361.

Stalnaker, R. (1999). Comparing qualia across persons. *Philosophical Topics*, *26*, 385–405.

Stalnaker, R. (2006). Shoemaker, "the Frege-Schlick view". In J. Thomson & A. Byrne (Eds.), *Content and modality: Themes from the philosophy of robert stalnaker* (pp. 254–257). Oxford University Press.

Travis, C. (2013). The silences of the senses. *Perception: Essays after frege* (pp. 23–58). Oxford University Press.

Tucker, C. (2010). Why open-minded people should endorse dogmatism. *Philosophical Perspectives*, *24*, 529–545.

Tye, M. (1995). *Ten problems of consciousness*. MIT Press.

Tye, M. (2000). *Consciousness, color and content*. MIT Press.

Tye, M. (2009). *Consciousness revisited: Materialism without phenomenal concepts*. MIT Press.

Williamson, T. (2000). *Knowledge and its limits*. Oxford University Press.