

The Way Ripe Tomatoes Look: An Argument Against Externalist Representationalism

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Abstract *Representationalist* theories of the phenomenal character of conscious experience are attractive because they promise a simpler ‘naturalization’ of the mind. However, I argue that representationalists cannot endorse an otherwise attractive *externalist* theory of the representational contents of conscious experiences. The combination of representationalism and externalism conflicts with a true principle linking phenomenal character to perceptual indistinguishability.

1 Externalist Representationalism and Indistinguishability

Representationalism is the view that: necessarily, two conscious experiences differ in phenomenal character—‘what it is like’ to undergo those experiences—if and only if they differ in representational content. I argue in this paper that representationalists cannot be *externalists* about the representational contents of experiences. Representationalists cannot hold, that is, that mere extrinsic differences between two subjects (or one subject at different times) might suffice to distinguish the representational contents of those subjects’ experiences (or a single subject’s experiences across times).

Representationalism is attractive to its proponents mainly for the promise it seems to hold for the project of ‘naturalizing’ the mind. If mental representation can be understood in naturalistic terms, and the phenomenal character of an experience is either identical or equivalent¹ to its representational content, then a naturalistic

¹ ‘Equivalent’ is being used here, as it is in Chalmers 2004, to mean that an experience’s character and content necessitate each other: necessarily, two experiences differ in character if and only if they differ in content. Note that the definition of ‘representationalism’ in the first paragraph of the main text requires only the equivalence, not the identity, of character and content.

understanding of phenomenal character ought to be possible as well. Although there are significant exceptions, representationalists typically combine their representationalism with an externalist theory of content for experiences.² This is because representationalists tend to find externalist views of mental representation more convincing than their internalist rivals, including for the sort of mental representation implicated in conscious experience. However, as the argument presented below will show, representationalism combined with externalism is a volatile mixture. The resulting view, which I will henceforth call *externalist representationalism* (ER), has a consequence that cannot be correct.

My argument against ER will appeal to a principle, which I take to be a necessary truth, linking the perceptual indistinguishability of (perceptible) properties of objects to the lack of large phenomenal differences in the perceptual experiences produced by those properties. Roughly, the principle is that perceptually indistinguishable properties of objects do not produce experiences of those features that differ *greatly* or *dramatically* in phenomenal character. I will argue that ER implies that perceptually indistinguishable features of objects may give rise to experiences with dramatically different phenomenal characters, and hence, given the linking principle, that externalist representationalism is false.

The underlying motivation for the principle that I claim conflicts with ER, and which I will formulate more precisely below, is the thought that dramatic phenomenal differences between experiences are *evidence* for differences in their causes. If a phenomenal difference between experiences is large enough, that will put one in a position to justifiably believe that the properties of the objects causing those experiences are indeed different, and thus in a position to distinguish the properties.³ The principle is a close cousin of one to which Block (1998) appeals, according to which, necessarily, *large, fast* changes in phenomenal character are introspectively *noticeable* (Block 1998, 668). (I will say more about the connection between Block's principle and mine in Sect. 5, below.)

The relevant sort of perceptual indistinguishability is one that holds, as I have said, between *properties* of objects. Or, as it might also be put, it is indistinguishability-*in-a-certain-respect*. Two objects might be distinguishable because they are differently shaped, while indistinguishable in some other respect—in their colors, for example. Imagine looking, in normal viewing conditions, at two ripe tomatoes, one of which is visibly larger than the other, but both of which are exactly the same shade and hue of red. In such a case, the two tomatoes will produce perceptual experiences with different phenomenal characters in you, since their differing sizes will make a phenomenal difference. However, given their color sameness (and the

² Dretske (1997, 2004), Harman (1990), Tye (1995, 1998) and Lycan (1996, 2001, 2004) all argue for externalist versions of representationalism. Chalmers (2004) is an exception. Chalmers is a representationalist, but he is an internalist about the representational contents of conscious experiences.

³ Justifiably believing on the basis of perception that properties of objects are distinct is not quite enough to *distinguish* them, since one might justifiably believe that properties are distinct when they are not distinct in fact. However, if one is in a position to justifiably believe on the basis of perception that properties are distinct and they really are objectively distinct, then that ought to suffice for perceptual distinguishability. The cases I will appeal to later as test cases for ER all involve objects that differ objectively in their perceptible properties, so this complication will not affect the later discussion.

fact that viewing conditions are normal), they are indistinguishable *in respect of color*. If I am right that there is a necessary connection between perceptual indistinguishability and the absence of large phenomenal differences, this will imply that the phenomenal characters of the color experiences the tomatoes produce in you do not differ greatly; what it is like to experience *the color* of the one tomato is not dramatically different from what it is like experience the color of the other, even if, overall, the two tomatoes produce phenomenally very different experiences in you.⁴

What is it, exactly, to be unable to perceptually distinguish the color of one tomato from the color of another? It is not simply to be incapable of knowing or justifiably believing that the two differ in color, since one might know that they differ in color, if they do, for reasons that have nothing to do with perceiving the tomatoes' colors. (A trustworthy friend could inform you that the two differ in color, for example.) The indistinguishability in question is *perceptual* indistinguishability; it is being unable to know or justifiably believe *on the basis of perception* that the tomatoes differ in color. It will be helpful to keep this point in mind in thinking about some of the examples that will be presented later: one can know or justifiably believe that two objects differ in their perceptible properties without that implying that one can tell, perceptually, that they so differ.

'Phenomenal' and related terminology are used in different ways by different writers, so it is important to be clear that its use here is to be interpreted in the Nagelian way (cf. Nagel 1974): two experiences differ in phenomenal character just in case *what it is like* for a given subject to undergo the one is different from what it is like for that subject to undergo the other. Interpreted in this way, phenomenal character is different from what many authors mean by 'qualia.' Qualia are usually conceived as non-relational elements of an experience, such as the yellowness of a mental image, whereas phenomenal character in the Nagelian sense is explicitly relational. Phenomenal character is what it is like *for the subject* to undergo the experience. Importantly, most representationalists interpret 'phenomenal character' in this Nagelian way as well. Representationalism is a theory of, precisely, Nagelian phenomenal character.

With these clarifications in place, the principle linking perceptual indistinguishability and phenomenal character can now be more precisely formulated:

(Φ) Necessarily, if (i) two objects x and y are perceptually indistinguishable, in a respect, R , for a normal human subject, S , at a time t , and (ii) x and y differ

⁴ Of course, in some cases, not just phenomenal similarity, but phenomenal *type-identity*—*sameness* of phenomenal character—goes hand in hand with perceptual indistinguishability. This is a natural description of the case of the same colored tomatoes described in the main text; they are indistinguishable in respect of color and your experiences of their colors are not just similar, but the *same*, in phenomenal character. However, a principle to the effect that the perceptual indistinguishability of features *implies* that the experiences of those features have the same phenomenal character has highly controversial consequences. For example, such a principle appears to run into trouble with the transitivity of the relation of *sameness of phenomenal character* (cf. Graff 2001, on the so-called 'phenomenal sorites,' and an earlier paper of mine, Deutsch 2005, on issues of representationalism and indistinguishability.) Discussion of these controversial consequences is best avoided here, given that my main aim is to build a case against ER. The case against ER can make do with the weaker principle (to be spelled out more fully below in the main text) linking indistinguishability between features of objects to the absence of large phenomenal differences between the perceptual experiences of those features.

objectively with respect to R , then the perceptual experiences caused by x and y in S at t are not, R -wise, dramatically phenomenally different.⁵

‘Respects’ are simply the perceptible properties—color, shape, size, smell, feel, etc.—of perceptible objects. An experience produced by an object, x , and another produced by a different object, y , are ‘not, R -wise, dramatically phenomenally different’ when the overall perceptual experiences produced by x and y are not dramatically phenomenally different relative to the relevant respect, R . So, for example, if x and y are different colors but nevertheless indistinguishable in color, (Φ) implies that a subject’s experiences of the differing colors of x and y will not be dramatically phenomenally different.

Clause (ii) of (Φ) ’s antecedent is in place to avoid complications over what, exactly, follows concerning distinguishability when the properties of objects do not produce experiences that differ dramatically in phenomenal character. If x and y are objectively exactly the same in color (as in the case of the same-colored, but differently-sized tomatoes described above), then they will not, in ordinary perceptual circumstances, produce color experiences that are dramatically phenomenally different. But it should not follow that they are then *distinguishable* in color, since that would seem to imply that they are different colors. So, the cases to which (Φ) is meant to apply, and all the cases to which I will apply it later, are cases in which the relevant perceptual objects do differ objectively in some respect; in fact, all of the cases discussed below will concern cases of differently colored objects.⁶

I have no general criterion for determining how large a phenomenal difference between two perceptual experiences must be to count (Φ) ’s consequent false. This is not a serious problem, however, since there are examples of phenomenal differences that are obviously large enough, even if the boundary between those that are and those that are not is not obvious. For example, a visual experience of a particular color is very phenomenally different from a visual experience of that color’s complementary color; red things cause distinctly different phenomenal color experiences than those caused by green things. All of the cases used below to bolster my argument against ER will involve obvious cases of large visual phenomenal differences. In fact, all of the cases will involve the phenomenal difference between

⁵ It might seem as though it would simplify things to formulate (Φ) in terms of the indistinguishability *simpliciter* of objects instead of complicating matters by bringing in reference to respects and the indistinguishability of respects. However it turns out to be difficult to explain what the perceptual indistinguishability of objects comes to. On the one hand, it seems that no *two* perceptible objects are ever strictly indistinguishable, since, for example, they will possess differing perceptible relational properties. On the other hand, weakening the relevant notion of indistinguishability so that it is a matter of being incapable of telling of two objects ‘which is which’ makes the notion too weak. I might not be able to tell, of two identical twins, for example, which is which, even if one twin is producing in me an experience very phenomenally different from the experience the other is producing in me. (Because, say, one is facing towards me and the other away.) Of course, (Φ) will imply that objects that are indistinguishable in every respect are indistinguishable *simpliciter*, but indistinguishability in every respect is rare. In any case, difficult issues concerning the indistinguishability of objects, or the implications of being unable to tell which of two objects is which, may be safely left to the side. The kind of ‘indistinguishability-in-a-certain-respect’ I describe in the main text is the only sort to which I will appeal in my argument against ER.

⁶ See note 3, above.

the visual experience typically produced in a normal human subject in normal viewing conditions by looking at something red, and the visual experience typically produced in a normal human subject in normal viewing conditions by looking at something green.

The argument for (Φ) is simply that it is difficult to see how phenomenal differences *that* large could be caused by indistinguishable properties of objects; when phenomenal differences are that large, the subject can appeal to the dramatic differences in the way the objects look (feel, taste, smell, sound) in judging that their properties are different. If their properties really are different, then this, it seems, is enough for the subject to distinguish them.

Supposing, now, that (Φ) is true, as I claim, how does its truth conflict with ER? The *externalist* part of ER implies that respects in which objects are perceptually indistinguishable may give rise to perceptual experiences that differ in content, and, in particular, in the representation of the indistinguishable respects themselves. For example, the externalist part of ER implies that it is possible that a red tomato is indistinguishable in respect of color from a green tomato even while a subject's experiences of the two tomatoes represent their colors correctly—the first as red and the second as green. However, the *representationalist* part of ER implies that experiences that differ in content differ in phenomenal character. So representationalism implies that a color experience of a tomato that represents the tomato as red is phenomenally very different from a color experience of a tomato that represents the tomato as green. Put these implications together and we have the 'possibility' that (Φ) rules out: objects that are perceptually indistinguishable in a given respect but which are phenomenally very different relative to that very respect—objects that are perceptually indistinguishable in color that produce dramatically phenomenally different color experiences, for example.

A version of Block's (1990) story of 'Inverted Earth' can be used to show that ER has this problematic implication. I elaborate the relevant version of the Inverted Earth story in Sect. 3. First, in Sect. 2, I review the reason why the original tale of Inverted Earth, as Block told it, has appeared to many to be ineffective against ER.

2 Inverted Earth and Experiential Memory

Inverted Earth is a planet just like Earth except that everything there has a color complementary to the color it has on Earth. On Inverted Earth, the sky is yellow, ripe tomatoes are green, lemons are blue, and so on. Were you to travel to Inverted Earth, things would appear dramatically different in color from the way they appear back home on Earth. Suppose you take a trip to Inverted Earth but that before going you have special color-inverting lenses implanted in your eyes. Ripe red Earth tomatoes look green with the lenses in. In fact, they look exactly the way ripe green Inverted Earth tomatoes *would* look with the lenses out.

You take your trip and enjoy yourself so much that you decide to stay. Initially, your experiences of ripe Inverted Earth tomatoes *misrepresent* their color. Ripe Inverted Earth tomatoes are green, but your experiences represent them as having the same color as Earth tomatoes, namely red. However, according to at least some

varieties of externalism, eventually a *representational shift* occurs: your experiences go from misrepresenting ripe Inverted Earth tomatoes as red to correctly representing them as green.

Externalists who think that experiences represent those objects and properties that are their “dominant causal source” (henceforth, ‘DCS-externalism’) must accept that a representational shift is possible, and occurs in the story as told. In the story, the dominant causal source of the type of experience you have when looking at ripe Inverted Earth tomatoes is, at first, ripe *red* Earth tomatoes. But you have taken up permanent residence on Inverted Earth and so eventually all of your ripe tomato experiences come to be caused by *green* Inverted Earth tomatoes. Green tomatoes come to be the dominant causal source of your ripe tomato experiences and so those experiences come to represent tomatoes (correctly) as green.

Block’s intuition, which I share, is that your ripe tomato experiences, whether of Earth tomatoes, color-inverting lenses out, or of Inverted Earth tomatoes, color-inverting lenses in, will be identical in phenomenal character. Or rather, more precisely, your *visual* experiences of the *color* of the ripe tomatoes you encounter will not differ in their phenomenal character. If Block’s intuition is correct, the representational shift is not accompanied by a *phenomenal shift*: your ripe tomato experiences go from representing ripe tomatoes as red to representing them as green, but they undergo no corresponding shift in phenomenal character. Since the representationalist part of ER is true only if a phenomenal shift accompanies the representational shift, Block’s intuition, if correct, implies that ER is false. (More carefully, it implies that DCS variety of ER is false. I will return later, in Sect. 4, to the issue of other externalisms; for now, take ‘ER’ to refer to a DCS variety.)

One externalist representationalist commentator on Block’s Inverted Earth story, Lycan (1996, 2001, 2004), has complained that *if* there is a representational shift (Lycan’s official view is that there is no such shift in the story as told.), then, intuitions be damned, there is a phenomenal shift as well. At the very least, what is needed, Lycan has complained, is some independent reason for accepting intuition over theory in this case.

Block (1996, 1998) has attempted to supply an independent reason, arguing that facts about what you, in your role in the story of Inverted Earth, will *remember* about your past experiences imply, or at least provide evidence for, the claim that there is no phenomenal shift. Lycan (1996, 2001, 2004) and Tye (1995, 1998) have responded by pointing out that externalists can hold that the environmental differences between Earth and Inverted Earth will affect the representational contents of your memory beliefs just as much as they will affect the contents of your experiences.

Suppose you are in an Inverted Earth produce aisle staring, color-inverting lenses in, at a ripe Inverted Earth tomato. The representational shift has occurred and so your experience represents the tomato as green. You describe the tomato as “looking red” although, assuming a Putnamian “semantic externalism,” your term ‘red’ now means *green*. You sincerely say to yourself: “I wonder whether the first ripe tomato I ever encountered looked red, just as this one does. Let me think. Ah, now I remember, yes, it did.” Is this evidence that the relevant ripe tomato experiences have the same phenomenal character? Unfortunately, it is not. As Lycan

and Tye have argued, given externalism about the “propositional attitudes,” the belief you express on Inverted Earth, after the representational shift has occurred, by saying, “The first ripe tomato I encountered looked red to me,” is true only if the first tomato you encountered looked *green* to you. But that tomato looked red to you. So this memory belief, among many others of your beliefs about the colors of things you encountered in the past, will be false, and so not evidence for anything. There is no reason why externalists about experiential contents should not be semantic and propositional attitude externalists as well. But these latter externalisms provide externalist representationalists with a fairly convincing reply to Block’s attempt to use facts about memory to support his intuition about Inverted Earth.

3 Four-Eyed Inverted Earth

As I have admitted, I share Block’s intuition about Inverted Earth. When I imagine myself as the subject in the story, I find it impossible to believe that what it is like for me, lenses in, to experience ripe Inverted Earth tomatoes is any different at the beginning of my stay on Inverted Earth than it is past the representational shift, or that my past experiences, lenses out, of ripe Earth tomatoes differ in phenomenal character from my current experiences of ripe Inverted Earth tomatoes. In some moods, the mere existence of the Blockian intuition strikes me as damaging enough to ER, and I wonder whether Lycan’s demand for some independent reason for favoring intuition over theory in the case is dialectically fair. But I also think that the demand can be met. Not by an appeal to experiential memory, which is problematic for the reason already reviewed, but by an appeal to perceptual indistinguishability and its connection, expressed by (Φ), to the absence of large phenomenal differences.

Here is the basic idea. It can be built into the Inverted Earth story that there are at least two ripe tomatoes which are different but exactly complementary shades, one a shade of red and the other the complementary shade of green. According to ER, a subject’s color experiences of these two will (eventually) represent them as very different in color. But the story can be told in such a way that the colors of the two tomatoes are, for the subject of the story, perceptually indistinguishable. ER will then imply that the tomatoes cause color experiences with dramatically different phenomenal characters, but (Φ) says that such a thing is impossible. So ER is false. What the subject of the story *remembers* about the phenomenal characters of his or her ripe tomato experiences is irrelevant. If representationally very different color experiences are produced by ripe tomatoes that are indistinguishable, color-wise, then ER is false.

Consider the first ripe tomato that you (in your starring role in the Inverted Earth story) ever saw on Earth. Call it ‘Tom’. Tom was red and represented as such by your experience of it. Now consider the first ripe tomato you encountered on Inverted Earth, after the representational shift had already occurred. Call it ‘Mot.’ Mot was green and, according to the externalist, represented by your experience as such. Suppose that Mot is, in fact, a shade of green that is the exact complementary shade to Tom’s shade of red. On externalist representationalist grounds, this large

representational difference between the two experiences should be accompanied by a large phenomenal difference. However, despite the alleged large representational difference in your experiences of Tom and Mot, you could not have told the tomatoes apart in terms of color. You happen to *know* that Tom and Mot are different colors, but this knowledge is based on general knowledge of yourself and your circumstances; it is not based on the perceptual experiences that Tom and Mot produce(d) in you. Given that the perceptual experiences caused in you by Tom and Mot do not provide you with grounds for distinguishing their colors, and given the truth of (Φ), it would seem to follow that the color experiences Tom and Mot caused in you were not dramatically phenomenally different. So ER is false.

Unfortunately, there is a flaw in this reasoning having to do with the claim that you cannot tell (could not have told) Tom's and Mot's colors apart. The color of first ripe tomato you ever saw on Earth (Tom) *is*, and has always been, perceptually distinguishable from the color of first ripe tomato you saw on Inverted Earth (Mot), post-representational shift. If the two tomatoes, somehow preserved, were to be brought before you now, they would look to you to be different in color. Earth Tom would "look green," as you would put it, while Inverted Earth Mot would "look red." The phenomenal difference would lead you to suppose that Tom and Mot differ in color and you would be right: Tom is red and Mot is green. The colors of Tom and Mot are perceptually *distinguishable* for you after all and so do not provide the relevant sort of example—an example of two perceptually *indistinguishable* features of objects that allegedly give rise to phenomenally very different experiences of those features.

Intuitively, what is needed is a case in which Tom, *looking to you just as it did when you first encountered it*, and Mot are viewed at once. If such a case were possible, intuition suggests that Tom and Mot would then be perceptually indistinguishable in respect of color. However, the externalist representationalist can argue that Tom *cannot* now look to you as it did when you first encountered it. Your perceptual system has changed. Your experiences of ripe tomatoes have shifted in their contents and, according to ER, this necessitates a shift in their phenomenal characters. Tom and Mot cannot *but* differ in producing experiences with dramatically different phenomenal characters, or so the externalist representationalist may argue. In fact, this difficulty in producing a relevant case—in which two objects, indistinguishable in color, give rise to color experiences which, on ER grounds, differ greatly in phenomenal character—can make it appear as though the appeal to experiential memory is the only recourse for those, such as myself, wishing to defend the Blockian intuition. Since, according to our opponents, Tom cannot now produce an experience phenomenally similar to the type of experience it produced when first encountered, we must retreat to claims about experiential memory: the subject, in *remembering* what it was like to experience Tom, can discern no difference between what it *was* like to experience Tom, and what it *is* like to experience Mot. But the appeal to experiential memory is problematic for the reason already reviewed.

Fortunately, there is a modification of the Inverted Earth story that seems to me to circumvent this difficulty. Imagine a planet, 'Four-Eyed Earth,' that is just like earth except that all of its human inhabitants have, literally, eyes in the backs of

their heads. The eyes in the front of a Four-Eyed Earthling's head are functionally and physiologically identical to the eyes found in ordinary Earthlings. The eyes in the backs of the heads of Four Eyed Earthlings, their 'back-eyes,' are, as much as possible, functionally and physiologically identical to the eyes in the fronts of their heads, their 'front-eyes.' With both sets of eyes open and functioning normally, the visual field of a Four-Eyed Earthling appears much the way the imagery on a split screen television monitor appears, the left portion of the field informing the Four-Eyed Earthling of what is taking place in front of him or her, the right portion informing the Four-Eyed Earthling of what is taking place in back of him or her. Color vision and its associated phenomenology is the same whether via back-eyes or front-eyes. For example, a ripe red Four-Eyed Earth tomato, viewed by a Four-Eyed Earthling with his or her front-eyes, gives rise to an experience phenomenologically type-identical to the experience produced by that same tomato viewed by the Four-Eyed Earthling with his or her back-eyes.

The front-eye and back-eye systems belong to the same broad kind; both are visual systems, both are involved in the production of states possessing visual phenomenal character, and both are involved in the production of color experiences whose range is familiar from our own human/Earthling case. In effect, Four-Eyed Earthlings have our ordinary human/Earthling visual system twice over: one complete system that has front-eyes as a component, and another complete system that has back-eyes as a component. The experiential states produced by these systems interact with one another to the extent that they can be compared, contrasted, used in inferences, and in other ways processed by a Four-Eyed Earthling's central nervous system. However, it is important, in the next stage of the thought experiment, to conceive of the visual systems to which front-eyes and back-eyes belong as *distinct visual systems*.⁷ In what sense are the front-eye and back-eye systems distinct? They are distinct in the sense that, for example, impairments to the front-eye system are not necessarily impairments to the back-eye system and vice versa. And they are distinct in the sense that, for another example, a complete removal or shut down of one system need not have any effect on the other at all. The two systems could function independently, in other words, even though, in a normal Four-Eyed Earthling, the systems run in tandem and interact via such a creature's split-screen visual field and its central nervous system. It is, as I say, important in the next stage of the thought experiment that the distinctness of the systems is borne in mind. I will indicate why in a moment.

Now, getting back to the thought experiment, imagine that you are a Four-Eyed Earthling who has planned a trip to 'Four-Eyed *Inverted Earth*', a planet exactly like your home planet except that everything there has a color complementary to the color it has back home on Four-Eyed Earth. Your days on Four-Eyed Earth have included plenty of ripe tomato experiences, viewed with both your front-eyes and your back-eyes. Before your trip, you have color-inverting lenses implanted, but

⁷ This, like the other stage-setting details of the thought experiment, is stipulative; I am stipulating that the systems in question are distinct, just as I have stipulated that Four-Eyed Earthlings have back-eyes, interact with plenty of ripe tomatoes, etc.

only in your front-eyes. For reasons we need not enter into, the day before you leave for Four-Eyed Inverted Earth, you have your back-eyes surgically sealed shut.

You arrive on Four-Eyed Inverted Earth and enjoy yourself so much that you decide to stay. At first, the visual experiences you have, via your front-eyes, of ripe green Four-Eyed Inverted Earth tomatoes misrepresent their color as red. But eventually the representational shift occurs, and they begin to correctly represent ripe tomatoes' color as green. Imagine that, at some stage past the point of the representational shift, you are standing in a Four-Eyed Inverted Earth produce aisle, staring with your front-eyes at a ripe green Four-Eyed Inverted Earth tomato. Call it (the tomato) 'Fot'. The color experience that Fot produces in you represents Fot as green. Now suppose that there is a surgeon, usefully hanging around in the produce aisle, who happens to have an imported, ripe Four-Eyed *Earth* tomato in his pocket. As it happens, this tomato is a shade of red that is the exact complementary shade to Fot's shade of green. Call it (the tomato) 'Fom.' Now the surgeon surgically unseals your back-eyes, removes Fom from his pocket, and holds it aloft, directly in front of your back-eyes. Let's suppose that back-eyes are such that their sealing and unsealing has no physiological effect on them whatsoever. A set of back-eyes that have been sealed for even a very long time work just as they would had they never been sealed at all. With this supposition in place, let's now ask: what color does your experience of Fom represent Fom as having? The answer, it seems to me, is *red*. Red ripe Four-Eyed Earth tomatoes are the dominant causal source of the type of color experience you are now having, via your back-eyes, by looking at Fom. However, your color experience of Fot, via your front-eyes, represents Fot as green. Here, then, are two color experiences, one of Fom, and one of Fot, that are representationally quite distinct and so are, according to externalist representationism, phenomenally very different as well.

It is crucial to the argument I am trying to make that I am right that, given a DCS externalist theory of content, your experience of Fom represents Fom as red. However, one might object that considerations of dominant causal source do not *clearly* imply that the type of color experience you have while looking at Fom represents Fom as red. It depends, one might say, on how that type is individuated. Suppose, for example, that the relevant experience-type is individuated in some broadly functional or physiological way. The details are not relevant; just imagine some relatively specific functional/physiological type that has your experience of Fom as an instance. Call this functional/physiological type 'G-type experiences.' The problem is that the dominant causal source of G-type experiences could be greenness (or green Four-Eyed Inverted Earth tomatoes and other green objects) and that your experiences of Fom and Fot are *both* G-type experiences. If so, then, given a DCS theory of content for experiences, it seems that we ought to conclude that your experience of Fom represents Fom as *green*, not red.

It is here that it is helpful to remember that the front-eye and back-eye perceptual systems are distinct systems. Your visual experience of Fom can be individuated in many ways. Only some of these ways will be relevant to assigning representational content to the experience. However, given that the front-eye and back-eye systems are distinct, it seems that individuating your experience of Fom partly in terms of, or by reference to, the specific system to which it belongs, namely the back-eye visual

system, is a way that is relevant to what your experience of Fom represents. The question, “What color do *back-eye* experiences of the color of ripe tomatoes represent those tomatoes as having?” might get a different answer than the question, “What color do *front-eye* experiences of the color of ripe tomatoes represent those tomatoes as having?” at least in part because front-eyes and back-eyes are components of distinct visual systems. Of course, it is not always true that differences in the causal pathways through which representations are produced will matter to the representational contents of those representations. A voicing of ‘hat’ through a larynx need not differ in any representational feature from a voicing of ‘hat’ through a prosthetic voice box. However, if the causal pathways are parts of distinct representational systems (as the front-eye and back-eye systems are), and the objects and properties that cause the representations in the two systems are also distinct (red objects as opposed to green ones, say), then, given externalism, there will be good grounds for supposing that the representations produced by the systems differ in content. All of this is true in the story of Four-Eyed Inverted Earth as I have told it so far. Hence, an appropriate way to individuate your experience of the color of Fom is by reference to the back-eye visual system of which it is a part, and the dominant causal source of your experiences of the color of ripe tomatoes in that system is *red* ripe Earth tomatoes. So, the claim that, on DCS-externalist grounds, your experience of Fom represents Fom as red seems correct.

If your experience of Fom represents Fom as red while your experience of Fot represents Fot as green, then, according to ER, they produce color experiences in you that differ greatly in phenomenal character. They differ as much as an ordinary human visual experience of a red object differs from an ordinary human visual experience of a green object, which is a dramatic phenomenal difference. But the trouble with the implication that the color experiences produced by Fot and Fom are dramatically phenomenally different is that you cannot tell, via those experiences, that Fot and Fom are different colors. They are perceptually indistinguishable for you in respect of their colors. If asked to say whether the tomatoes differ in color, you might be able to correctly judge the matter, since, we may suppose, you know about the inverted lenses, you know of the color differences between Four-Eyed Earth and Four-Eyed Inverted Earth tomatoes, and so on. Yet, clearly, your judgment would not be *perceptually based*; that is, you do not know, simply based on the way the tomatoes look, that Fom and Fot differ in color. If (Φ) is correct, the perceptual indistinguishability of Fot and Fom implies that your color experiences of them are *not* dramatically phenomenally different, contrary to the judgment of ER.

This jibes with our intuitions about the case. Intuitively, the tomato appearing in the left portion of your “split screen” visual field, Fot, looks to be exactly the same color as the tomato appearing in the right portion, Fom. Imagine that there is a native Four-Eyed Inverted Earthling friend of yours standing next to you in the produce aisle. Like you, she is looking with her front-eyes at Fot, and with her back-eyes at Fom. Earlier in the day, just for kicks, this friend of yours popped a pair of color inverting lenses into her back-eyes. Your friend’s experiences represent both tomatoes as green, so she poses no challenge to ER. But as far as distinguishing Fot from Fom by the color they appear to be, you are in no better position than is your

friend. Your friend's color experiences of Fot and Fom are not phenomenologically different and neither are yours: What it is like for you to experience Fot is not dramatically different from what it is like for you to experience Fom.

Can the claim that Fot and Fom are indistinguishable in color for you be resisted? It might be thought that proponents of ER have an easy way to resist it. Since, on their view, Fot is visually represented by you as green, while Fom is visually represented by you as red, the two tomatoes produce color experiences with different phenomenal characters, and, hence, look different in color to you. But if they look different in color, you should be able to *infer*, on that basis, that Fot and Fom differ in color. If that is right, then, contrary to what I said above, Fot and Fom are distinguishable in color for you after all. Why should proponents of ER agree with the claim that they are indistinguishable in color?

The answer is: an effect of the color-inverting lenses implanted in your front-eyes is that *they make Fot indistinguishable in color from Fom*. The lenses invert the colors of things; they make green things look red, among other color inversions. Green Fot is made, by the lenses, to look red to you. In fact, they make Fot look to you to be exactly the same color as Fom. It may be that proponents of ER are under pressure from their theoretical commitments to deny these straightforward descriptions of the effect of the color-inverting lenses. But that, in essence, is the very problem with ER that the story of Four-Eyed Inverted Earth is meant to bring out.

Can proponents of ER get away with admitting that Fot would have been indistinguishable from Fom if both had been viewed before the representational shift, but that now, after the shift, the two tomatoes are no longer indistinguishable in color? That suggests that the effect of the color-inverting lenses might be *counteracted*, somehow, by the representational shift or what caused it. But this is implausible. Counteracting the effect of the lenses would seem to require some intrinsic change to the lenses or to your front-eyes, but neither change occurs in the story. All that happens is that green tomatoes come to be the dominant causal source of your experiences of the color of tomatoes via your front-eyes. But that is not a change that will counteract the color-inverting effect of the lenses, which, again, is to make Fot indistinguishable from Fom.

4 Other Externalisms

Perhaps the tale of Four-Eyed Inverted Earth shows that *some* varieties of ER are committed to the possibility that objects that are perceptually indistinguishable in a certain respect may give rise to dramatically phenomenally different experiences of that respect, but does it show that all are? What of externalists who deny that experiences represent the objects and properties that are their dominant causal source? For example, some externalists propose *teleological* theories of mental representational content.⁸ According to such theories, mental states, including experiences, represent the objects and properties they are *designed*, by Mother

⁸ Millikan (1984) and Papineau (1984) defend versions of teleological externalism about mental content.

Nature, to indicate. If a mental state type has been selected for indicating red things, it will represent things as red, and will go on representing things as red, even if the state type comes to be caused in the majority of cases by green things. Both Lycan and Tye avow teleological versions of ER, and both argue that this allows them to accommodate the Blockian intuition that there is no phenomenal shift in the original Inverted Earth story. They need not admit a phenomenal shift, they say, because they are not committed to there being a representational shift in the first place. If it is the evolutionary function of one of your experience types to represent redness, then a mere move to Inverted Earth or Four-Eyed Inverted Earth will not disrupt this function, and so will not effect a shift in the representational content of the type.

Lycan's and Tye's appeals to teleological accounts of representational content suggest a more general strategy for externalist representationalists to pursue in the face of the Inverted Earth and Four-Eyed Inverted Earth stories: simply cook up a theory of content that does not imply that the experiences of the space travelers in the those stories undergo a representational shift. A teleological theory is one theory of content that fits the bill, but no doubt there are others.

The trouble with this general strategy is that it misgauges the depth of the problem raised by the Inverted Earth and Four-Eyed Inverted Earth stories. It is true that these stories, as they have been (re)told here, target a variety of ER (a DCS variety) that is perhaps not held by any actual externalist representationalist. But it is also clear that, for any representationalist theory that is genuinely externalist, there is going to be *some* thought experimental scenario that challenges the theory in much the way that the stories of Inverted Earth and Four-Eyed Inverted Earth do. Externalists about experiential content admit that extrinsic differences between a subject at different times might suffice for differences in that subject's experiential contents at those times. So there will be some conceivable scenario in which the relevant extrinsic differences obtain and the contents therefore differ. If the differences can obtain without the subject knowing or noticing the differences (This is the effect of the inverting lenses in the Inverted Earth and Four-Eyed Inverted Earth stories.) then it seems that these differently representing experiences might have perceptually indistinguishable features of objects as their cause. In other words, for any externalist theory of representational content, there will be a story, very much like the Four-Eyed Inverted Earth story, in which perceptually indistinguishable features of objects produce representationally distinct experiences of those features in a given subject. Since (Φ) is true, these experiences cannot be dramatically phenomenally different, so there is *no* true version of externalist representationalism, whether the externalism in question is DCS-externalism, teleological externalism, or otherwise.

For those not quite convinced by this line, consider the ways in which the Four-Eyed Inverted Earth story could be modified to pose a challenge to teleological versions of ER. Tye himself (Tye 1998) suggests one such way by imagining a *swamp duplicate* of himself migrating to Inverted Earth. A swamp duplicate of Tye is a creature microphysically type-identical to Tye that forms spontaneously when lightning strikes a swamp. Swamp-Tye lacks an evolutionary history, so none of its states have teleological functions. But Tye admits that it is implausible to think that Swamp-Tye lacks representational mental states and phenomenal consciousness

entirely. Even if Swamp-Tye lacks these things at first, surely, Tye says, it will acquire them eventually. In other words, a teleological account of the representational contents of experiences cannot be the full story about content determination for experiences. Swamp-Tye has, or at least comes to have, experiences with representational contents, but these experiences do not have the contents they do because of Swamp-Tye's teleology. Swamp-Tye does not have one of those. So how do Swamp-Tye's experiences come to have the contents they do eventually come to have? Presumably, something much like the DCS externalist's story applies to the contents of at least swamp creatures' experiences. But then we are off to the races: simply imagine a swamp duplicate of a Four-Eyed Earthling migrating to Four-Eyed Inverted Earth. We can tell the same story about a Four-Eyed Earthling swamp duplicate émigré to Four-Eyed Inverted Earth that we did about the ordinary Four-Eyed Earthling émigré. There will be, for it, objects indistinguishable in color which, given ER, produce color experiences that do not differ dramatically in phenomenal character but which are very different in their representational contents.

But swamp creatures are not really required to reveal the difficulty with the teleological externalist's 'solution' to the problem posed by the stories. It is true that the teleological externalist is not forced to say that a representational shift occurs when, in the stories, green tomatoes come to be the dominant causal source of the space traveler's ripe tomato experiences. But it does seem that there will be *some* point at which even the teleological externalist will have to say that a representational shift has occurred. The central idea behind teleological theories is the idea that a mental state-type represents those objects and properties it is designed to indicate. But a mental state-type designed for one purpose, indicating red, say, can, over time, be redesigned for a different purpose, indicating green, say. Such redesign is commonplace in nature. Organs and other body parts gain new functions or stop functioning in the way they once did, for example. But if teleological ER allows that a mental state-type can be redesigned to indicate green, when it was originally designed to indicate red, we can simply build the conditions under which this redesign would take place into the details of a Four-Eyed Inverted Earth story. Is there something in the conditions under which an experiential state-type might gain a new function that will block the consequence that is so damaging to ER, namely the consequence that dramatically phenomenally different experiences may be produced by indistinguishable features of objects? I cannot see that there is. In fact, here is a version of the tale that appears to pose the problem for teleological theories more directly than the Swampman variation.

You are Four-Eyed Earthling with a strange genetic mutation that has two interesting effects. First, the mutation causes Four-Eyed Earthlings who have it to develop a condition in their front-eyes that has exactly the effect that the color-inverting lenses of the earlier variations of the tale had. Four-Eyed Earthlings with the mutation wake up one day to find that, via their front-eyes, ripe tomatoes look green, the sky on a clear day looks yellow, and so on. Second, the mutation causes the back-eyes of Four-Eyed Earthling who has it to, one day, seal shut. In your case, both effects of the mutation have already occurred. Shortly after they occurred, you rocketed off to Four-Eyed Inverted Earth and took up permanent residence there. During your time on Four-Eyed Inverted Earth, the visual experiences you have, via

your front-eyes, of ripe green Four-Eyed Inverted Earth tomatoes misrepresent their color as red. After all, those experiences have, in your species, the function of indicating red (Earth) tomatoes, and we are supposing, along with the teleological externalist representationalist, that an experience-type represents that which it is designed to indicate. Furthermore, your ripe tomato experiences go on (mis)representing the color of ripe green Four-Eyed Inverted Earth tomatoes as red until your dying days. Green tomatoes come to be the dominant causal source of your ripe tomato experiences, but this is not yet enough to disrupt the teleological function your evolutionary history has assigned to them, namely indicating *red* tomatoes. However, the mutation is heritable (though offspring of a mutant Four-Eyed Earthling are born with 'inverted' front-eyes and 'sealed' back-eyes) and your great-great-great-great-grandson, Frank, has it too. Now consider the visual experiences Frank has via his front-eyes of ripe green Four-Eyed Inverted Earth tomatoes. What color do these experiences represent such tomatoes as having? Even on a teleological externalist account, the answer, it seems to me, should be *green*. Not because green tomatoes are the dominant causal source of those experiences, but rather because, over time, the experience-type that was designed in you to indicate red tomatoes has been redesigned, by the time Frank's generation arrives on the scene, to indicate green ones.

There Frank stands in a Four-Eyed Inverted Earth supermarket produce aisle, staring with his front-eyes at a ripe green Four-Eyed Inverted Earth tomato. The visual experience produced in him by this tomato—let's just call it 'Fot' again—represents Fot's color as green. Enter the handy surgeon with Fom, an imported, ripe Four-Eyed *Earth* tomato, which is a shade of red exactly complementary to Fot's green, in his pocket. The surgeon unseals Frank's back-eyes and holds Fom aloft, directly in front of Frank's back-eyes. Back-eyes, let's suppose again, are extremely hardy. Despite the fact that Frank's back-eyes have been sealed since birth and so never used, back-eyes ever deteriorate, and upon unsealing function in just the way the back-eyes of normal Four-Eyed Earthlings and Four-Eyed Inverted Earthlings do. Now let's ask: what color does Frank's experience of Fom represent Fom as having? On teleological externalist grounds, the answer, it seems to me, should be *red*. The experiential state-type of the visual experience Frank has, via his back-eyes, of Fom was designed in his species to indicate red things. But, unlike their front-eyes, the mutated back-eyes of Frank's ancestors were not subject to the same environmental conditions that served to alter the teleological function of the color experiences had through them. In fact, up until the surgeon gets his hands on Frank in the produce aisle, and with the exception of you, Frank's great-great-great-great-grandparent, none of Frank's ancestors have ever had any visual experiences via their back-eyes. This, I think, makes it plausible to suppose that the teleological function of the type of color experience Frank has when looking with his back eyes at Fom is the same as the function that type of color experience originally had in his ancestral line, namely indicating red. Assuming a teleological account of mental representation, an experience of that type therefore represents things as red. So Frank's experience of Fom represents Fom as red.

But if Frank's experience of Fom represents Fom as red, while his experience of Fot represents Fot as green, then, according to representationalism, those

experiences differ dramatically in phenomenal character. And if they differ dramatically in phenomenal character, then, according to (Φ), the colors of the objects that produce them, Fom and Fot, cannot be perceptually indistinguishable for Frank. And the trouble, once again, is that it seems that Fom and Fot *are* perceptually indistinguishable in color for Frank. The color inverting effect that Frank's inherited genetic mutation has on his back-eyes appears to guarantee this. Frank is no better off, when it comes to distinguishing Fom and Fot by their colors, than a normal native Four-Eyed Inverted Earthling who has just popped some color inverting lenses into their back-eyes would be. It appears, then, that even teleological varieties of ER allow that perceptually indistinguishable features of objects may give rise to dramatically phenomenally different experiences. So, given (Φ), such varieties are false.

5 Perceptual and Introspective Indistinguishability

In a premonition of something close to the argument against ER I have been presenting here, William Lycan, playing devil's advocate, considers the following argument against a view he holds called *phenomenal externalism*:

If qualia are wide, then there must be a relevant sort of twin earth, on which the relevant twin WGL's sensory state has a different representational content from mine even though he is appeared to in the same qualitative way as I am now. Yet if I were spontaneously transported to that twin earth and took the place of my twin, I would notice nothing introspectively, despite a change in representational content; so my qualia must remain unchanged and so are narrow (Lycan 2001, 24).

Although Lycan bills it as such, his argument is not quite an argument against externalism about what Lycan calls 'qualia.' (More on Lycan's use of this term in a moment.) Instead, it is an argument against a view that is both externalist *and representationalist* about 'qualia,' just as my own Four-Eyed Inverted Earth argument is an argument against not simply externalism about phenomenal character, but rather against the *combination* of externalism and representationalism about phenomenal character. After all, one must say, regarding Lycan's argument, that the qualia of WGL's sensory experiences shift when WGL travels to the 'relevant sort of twin earth' and takes the place of his twin, only if one also holds, as a representationalist about qualia would, that a shift in the representational content of his sensory states implies a shift in the qualia of those states.

Both Lycan's argument and mine target the combination of externalism and representationalism about a certain feature of experiences ('qualia' in Lycan's argument and phenomenal character in mine), and my Four-Eyed Inverted Earth is essentially the 'relevant sort of twin earth,' but, even so, there are differences between the argument Lycan imagines and the argument involving Four-Eyed Inverted Earth I presented in earlier sections.

Lycan's argument concerns 'qualia,' which he defines as 'the introspectible qualitative phenomenal features that characteristically inhere in sensory experiences,'

giving ‘the color of an afterimage’ as a ‘good example’ (Lycan 2001, 17–18). It is clear from this definition and the example that neither a ‘quale’ nor even the full collection of ‘qualia’ inhering in a given sensory experience can be identified with the ‘phenomenal character,’ as I use this latter term, of the experience. There are no doubt important determinative connections between an experience’s qualia and what it’s like to undergo the experience (i.e., its phenomenal character), but I have no specific views about what these might be, and, determinative connections or not, it is plain that the concepts of qualia and phenomenal character are different.

This is a somewhat superficial difference, however. Someone inclined to use Lycan’s argument against ER about qualia would be equally inclined, it seems to me, to use it against ER about phenomenal character. Certainly, the consideration involving *introspective indistinguishability* that Lycan’s argument raises against ER about qualia is just as forceful against ER about phenomenal character. And perhaps my own Four-Eyed Inverted Earth argument can be turned against ER about qualia, in Lycan’s sense of ‘qualia.’

Another difference between the two arguments is that, as I noted, Lycan’s argument appeals to the *introspective indistinguishability* of a pair of *experiences*, whereas my Four-Eyed Inverted Earth argument appeals instead to the *perceptual indistinguishability* of features of perceptual *objects*, the tomatoes, Fot and Fom. The principle linking introspective indistinguishability to phenomenal/qualitative sameness that Lycan’s argument suggests is close to the principle that I attributed to Block in Sect. 1 concerning large, fast phenomenal changes. Block, remember, claims that such changes are introspectively noticeable. Block attempts to use his principle to argue against ER, but, as it stands, I think his principle is ineffective in this regard. The difficulty with the principle is that it concerns introspective indistinguishability between experiences had *at different times*, and so raises the specter of the memory objection discussed in Sect. 2. The argument Lycan imagines suffers from the same flaw.⁹

I think that a principle to the effect that a pair of introspectively indistinguishable *occurrent* experiences cannot differ dramatically in phenomenal character is very plausible and would clearly apply in just those places where I have applied (Φ) in my various Four-Eyed Inverted Earth scenarios. So it may be that an introspective indistinguishability principle modeled on (Φ) would do the same work (Φ) itself does. However, strictly speaking, the argument based on (Φ) that I have presented does not depend on any claims about introspection or introspective indistinguishability. It depends only on claims about what follows if properties of objects are *perceptually* indistinguishable (at one and the same time). This strikes me as a somewhat more significant difference between the argument Lycan imagines and my own. My (Φ)-based argument shows that ER has trouble accommodating certain

⁹ In the argument Lycan imagines, the sensory experiences said to be introspectively indistinguishable are not occurrent (cotemporaneous) experiences. The traveling WGL cannot introspectively distinguish a *current* sensory experience he is having on ‘the relevant sort of twin earth’ from a *past* experience he had on earth. This opens the argument to the memory objection.

facts about perception and this, it might be plausibly thought, is its fundamental difficulty.

Although Lycan's argument concerns qualia, not phenomenal character, and the introspective indistinguishability of a pair of experiences, not the perceptual indistinguishability of properties of objects, it may be that some of the objections that apply to Lycan's argument are applicable to my own Four-Eyed Inverted Earth argument. Lycan, remember, does not endorse the argument he presents against ER about qualia. In fact, he offers an objection to the argument that runs as follows:

The same goes for propositional attitudes, i.e., the Earthling transported to Twin Earth would notice nothing introspectively, despite the change in her/his belief and desire contents. Yet the attitude contents are still wide. Wideness does not entail introspective change under transportation (Lycan 2001, 24).

The trouble with this objection is that it defends only the externalist part of ER, not the representationalist part.¹⁰ It may be that representational contents generally, experiential contents as well as propositional attitude contents, are externalistically determined. If so, then, as the 'transportation scenarios' imagined in Lycan's argument and my own Four-Eyed Inverted Earth argument suggest, it may also be that representational differences between a subject's attitudes or experiences may exist without that subject having introspective access to those differences and without that subject being able to perceptually distinguish the features that give rise to those representationally distinct attitudes or experiences. But when we add representationalism to the mix, and insist that differences in phenomenal character or qualia 'track' the representational differences in the relevant representational states, then, it seems, indistinguishability, either introspective or perceptual, presents a problem. For it seems impossible that two perceptually indistinguishable features of objects should give rise to experiences that differ dramatically in phenomenal character or qualia. And it seems likewise impossible for two introspectively indistinguishable experiences to differ dramatically in phenomenal character or qualia. Lycan is right that, as he puts it, 'wideness does not entail introspective change under transportation.' But if one holds *both* that the representational contents of experiences are wide (externalism), *and* that a difference in representational content between two experiences implies that the two differ—and can differ dramatically—in phenomenal character (representationalism), then, as the traveling scenarios appear to show, one's view commits one to the possibility of introspectively indistinguishable, yet dramatically phenomenally distinct experiences, caused by perceptually indistinguishable features of objects. But the fact that the view has this commitment shows that the view cannot be true,

¹⁰ Of course, Lycan thinks that his introspective indistinguishability argument is an argument against externalism about qualia, not against externalist *representationalism* about qualia. As I say in the main text, he is wrong to conceive of it this way; that is, the argument he actually presents is an argument against representationalist versions of externalism about qualia. Still, since Lycan (mis)conceives of the argument as threatening to just externalism about qualia, it is no wonder, really, that his reply to the argument defends only the externalist part of ER.

since each kind of indistinguishability suffices on its own to rule out large phenomenal differences between the relevant experiences.

6 Conclusion

Putnam's Twin Earth has convinced many of us that intrinsically identical subjects do not necessarily share the same representational states. I believe that there is water in the oceans but my Twin Earth twin, with whom I am identical 'down to the last micro-particle,' lacks this belief. One way in which externalism is a surprising doctrine is that representational differences between two subjects (a difference in their beliefs, e.g.) might not affect *the way things seem* to them. Or, more carefully, since there is no doubt an 'attitudinal' understanding of 'the way things seem,' a representational difference between two subjects might not amount to a *felt* difference; it might not matter to what it is like to be in those differing representational states. I could switch places with my Twin Earth twin and never know the difference, not even when, according to externalism, I shed my *de dicto* beliefs about water and gain a new set of *de dicto* beliefs about twin water. Many experiential states, and arguably all perceptual experiential states are, like beliefs and the other propositional attitudes, representational states, and it is now common to hold that externalism, if true of any mental state, is true of representational states generally. But unlike beliefs, perceptual states have specific phenomenal characters, and this fact limits our theoretical options regarding them. If we hold an externalist view of the representational contents of perceptual states, then our externalism prevents us from going on to endorse representationalism about the phenomenal characters of those states. According to the argument of this paper, we are prevented in this not because of a brute intuition that phenomenal character is 'narrow,' but rather because of the link between indistinguishability and the absence of dramatic differences in phenomenal character. We can learn to live with the consequence of externalism that differently representing mental states might be caused by perceptually indistinguishable features of objects. We cannot, or so I have argued here, accept that phenomenally very different perceptual states might be caused by perceptually indistinguishable properties of objects. However, this is precisely what externalist versions of representationalism ask us to accept. Such versions, then, ought to be rejected.¹¹

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