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CAN DISJUNCTIVISTS EXPLAIN OUR ACCESS TO THE SENSIBLE WORLD?

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> The colors are out there... The smells and tastes are objective features of the world... What I disagree with is the idea that our brain makes a big contribution [to experience]... Their [brain processes'] function is just to reveal the world to us.
>
> —John Campbell (2009)

A central tenet of 17th century modern philosophy was that science forces us to reject the commonsense conception of the external world as populated with mind-independent (objective, non-relational) sensible properties. Instead we must kick the sensible properties upstairs into the dustbin of the mind. Today many would agree that the sensible properties are not entirely mind-independent properties of external objects. This is certainly the dominant view among scientists working on sensation and perception. But there are also various philosophers who are bent on returning to our cozy, pre-modern conception of the world. They kick sensible properties back down into the mind-independent world, and hold that we are regularly in direct cognitive contact with that world.

Among them are contemporary *naïve realists*. They go beyond the claim that we regularly directly perceive the true mind-independent sensible properties of things. Their distinctive claim is about the *ground of phenomenology*. For instance, they hold that, if you look at a tomato under normal circumstances, you have an experience with a certain phenomenal character simply *by virtue of* seeing the redness and roundness of the tomato (as opposed to representing a content, say). In my view, the best (and perhaps only) argument for naïve realism is simply that this claim is very intuitive. As for illusion and hallucination, naïve realists typically say that in these cases

all that can be said about your experiential situation is *negative*: you are in a state that cannot be discriminated by reflection from the successful case. So naïve realism naturally (though perhaps not inevitably) leads to *disjunctivism* about the metaphysics of experience: having a visual experience is a matter of either being directly acquainted with the manifest world or being in some more impoverished condition.

Some disjunctivists provide epistemological arguments for their view over rivals. I think the epistemological arguments fail.[1] In particular, I think *intentionalism* is untouched. Here I go on the offensive. Ironically, I think that there are serious epistemological arguments *against* disjunctivism. Here I discuss two. Together, they cover the full range of experiences: hallucinatory, illusory, and veridical. The first is due to Mark Johnston and concerns our access to sensible properties in *hallucination* and *illusion*. It targets the typical disjunctivist's negative account of hallucination and illusion. I suggest that this argument is difficult to defend, although there may be a better argument in the vicinity. Then I develop a second argument that I think fares better. It concerns our access to sensible properties in *veridical experience* and targets the disjunctivist's naïve realism. It addresses two matters disjunctivists ignore: the empirically-demonstrated role of the brain in determining phenomenal consciousness, and non-visual sense-modalities.

1. Preliminaries

I focus throughout on Michael Martin's 'negative' disjunctivism. Very roughly:

> Having a red-round experience (for instance) = being in a state indiscriminable by reflection from seeing the redness and roundness of something.

This view is strictly speaking non-disjunctive, holding that a common factor runs through the successful cases of perceiving and unsuccessful cases, namely a negative epistemic property. Yet it counts as "disjunctivist". It accommodates a key disjunctivist claim: roughly, in successful cases but not unsuccessful ones, the ground of phenomenology is the success (naïve realist) property of simply seeing an object and its character. (For seeing trivially grounds being in a state reflectively indiscriminable from seeing.) This success property is not "screened off" by any robust, positive common factor (for instance, representing a content) from "shaping the contours of conscious experience", as Martin puts it.[2]

Intentionalism, disjunctivism's chief rival, will also come up. One reason is that Johnston thinks his argument about our access to sensible properties in hallucination supports a quasi-intentionalist account of hallucination, which I will call *property-complex intentionalism*. (Johnston's argument applies equally to illusion but in discussing the argument I will focus on

hallucination.) On this view, having a hallucination of a tomato consists in being aware of a complex property (an abstract object) built from redness and roundness. The color and shape exist but are not instantiated by external objects, sense data, or the experience (experiences cannot be colored or shaped). So Johnston accepts the intriguing view that in hallucination one is *aware of uninstantiated universals*. This view of hallucination is basically an intentionalist account, with a complex property (rather than a complete proposition) playing the role of the content of hallucinatory experience.

As for the veridical case, Johnston holds that in this case one is aware of the abstract complex property just as in the hallucinatory case; but in this case one is also aware of the *concrete instantiation* of the complex property, that is, the redness and roundness of a particular tomato. Indeed, although Johnston is not explicit and does not use these terms, he might accept the claim of naïve realism that in the veridical case it is "by virtue of" being aware of this concrete property-instantiation (and not merely by virtue of being aware of the abstract complex property) that one has an experience with a certain "phenomenal character". In that case, he is a naïve realist who rejects the "negative" kind of disjunctivism which typically goes with naïve realism and which is the target of his argument.

So one reason intentionalism will come up in what follows is that Johnston thinks his argument about hallucination supports a positive, quasi-intentionalist account of hallucination. There is another reason why it will come up. After considering Johnston's argument against disjunctivism, we will turn to my argument against disjunctivism, which concerns our access to sensible properties in *veridical experience.* I believe my argument not only counts against disjunctivism, but also lends some support to intentionalism *across the board,* by contrast to Johnston's restricted intentionalism. Roughly, on across-the-board intentionalism, there is a special experiential relation R such that having a red-round experience is identical with standing in R to a (possibly false or unsatisfied) intentional content (a proposition or a Johnstonian complex property) involving redness and roundness. Further, naïve realism of any kind is false (including the version I tentatively attributed to Johnston): in veridical cases as well as non-veridical cases, one has an experience with a certain phenomenal character merely by virtue of standing in this relation to the content (an abstract object), rather than by virtue of seeing *concreta,* such as the particular redness of this tomato.

2. Access to Sensible Properties in Hallucination and Illusion

Johnston's argument is brief:

> Frank Jackson's Mary could come to know what red is like by hallucinating... [Even in hallucination] one comes to know what certain qualities are like, and... so is able to place them in a [resemblance-order] with other qualities of the same

> family... I know of no satisfactory Disjunctivist account of [this]... I can learn from my hallucination what a certain shade of red is like. How can I do this unless my hallucination involves awareness *of* that shade, unless that shade is an object of my awareness? (2004, 130–131)

Likewise, Hawthorne and Kovakovich:

> doesn't it seem right to say that [someone who hallucinates red] had *encountered* redness in experience... and now knows what it is like for something to be red? It seems like Martin's [disjunctivism] fails to square with a naïve conception of hallucination. (2006, 178)

The argument requires elaboration. Suppose Mary has a super-vivid hallucination of a blue_{17} circle, a purple_{21} ellipse, and a yellow_{34} square (see Figure 1).

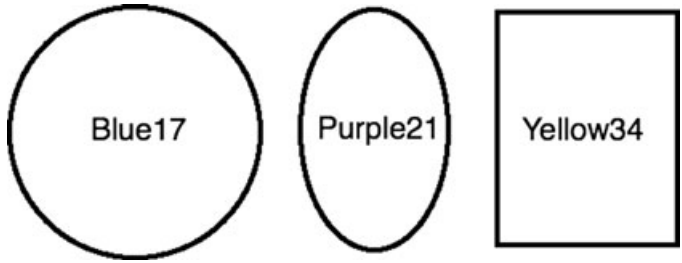

Figure 1

The basic datum is that Mary has propositional *justification* for believing:

> That blue_{17} resembles purple_{21} more than yellow_{34}.
>
> That blue_{17} is a "unitary" or "pure" color, one containing only one hue-component (blue).
>
> That purple_{21} is a "binary" color, one that is roughly 80% bluish and 20% reddish. (Assume Mary is practiced in such judgments.)
>
> That the first shape is more like the second than the third.

In fact, these propositions are true. Granted, no particular colored and shaped objects are before Mary. But these propositions are not about particular objects. Indeed, Pap, Jackson and Lewis argue that they are not "first-order propositions" of any kind: they are not (general or other) propositions *about objects*. They are second-order propositions about colors and shapes, which are abstract objects of some kind (e.g., universals). This

is Johnston's view. I will be assuming it, but nothing in what follows hangs on it.[3]

Now, because of spectrum-inversion or brains-in-vats, many will say Mary's experience provides access, not to 'colors' as I have said, but 'appearance properties', 'qualitative characters' or 'perfect colors', which are not colors.[4] Against this, I think the properties to which Mary's experience provides access clearly deserve the name 'colors'. But nothing in what follows hangs on this verbal issue.

Unless Mary is wise to her situation, she also has a justification for believing various (false) first-order propositions about *objects,* for instance, that there is a $blue_{17}$, circular object there. There are half-way decent theories of the perceptual justification of first-order beliefs—old-fashioned abductivism, contemporary dogmatism, and so on—which disjunctivists might adopt. As we shall see, these theories fail to generalize to the justification of the kind of second-order beliefs that Johnston's argument is about.

We face the *justification question*: by virtue of what does Mary have a justification for believing the second-order propositions about colors? What "grounds" this justification?

Johnston believes the right answer is compatible with his intentionalism about hallucination but incompatible with disjunctivism. Call this Johnston's *Incompatibilist Claim*. This is only plausible when it comes to standard *negative* disjunctivism of the kind I am focusing on in this paper, defended by Michael Martin among others. Johnston's argument has no force against so-called "positive" versions of disjunctivism (of which Johnston's own view might be regarded as an example).[5] Accordingly, when in what follows I use 'disjunctivism' without qualification, it is to be understood that I mean negative disjunctivism.

Johnston's argument is that he cannot think of how the negative disjunctivist might answer the justification question. It is indeed unclear how Mary's justification might be grounded in her being in a state that is reflectively indiscriminable from seeing the relevant objects. It does seem we need a more "positive" account, such as Johnston's quasi-intentionalist account in terms of awareness of uninstantiated colors.

But I will introduce four answers to the justification question, all apparently compatible with negative disjunctivism. I will also argue that all four accounts are problematic. Hallucinatory knowledge of uninstantiated properties poses a serious puzzle. But it has yet to be shown that the correct solution rules out disjunctivism.

I will assume that color and color-resemblance cannot be reductively explained in response-dependent terms. Colors are not identical with dispositions to produce color experiences. And the fact that two colors resemble does not reduce to the fact that they are identical with dispositions to produce resembling color experiences, or anything along those lines. Rather, colors and their resemblances are *response-independent*. This assumption means,

contrary to some *qualia* theorists, that Mary doesn't learn about colors and their resemblances by having some kind of direct knowledge of her own color experiences and their resemblances. Indeed, a natural view is the reverse: she in some sense learns about her experiences and their resemblances, by ascertaining the (real or apparent) colors she experiences and their resemblances, as proponents of "transparency" (typically, intentionalists and disjunctivists) maintain. For instance, she learns that her experiences of blue and purple resemble each other by learning that the experienced colors resemble each other. I myself accept this. But it is anyway appropriate to make this assumption in the present context: for we are discussing whether disjunctivists can account for Mary's justification, and disjunctivists accept response-independence (more on this in §3.1).

Even if the response-independence assumption about color is false, the points I will make might have application, for two reasons. First, *shapes* and *shape-resemblance* are surely response-independent affairs. Mary doesn't learn about shape-resemblance by learning about her experiences. How then does she learn about shape-resemblance from her hallucination? The puzzles I will raise would arise here. Second, even if color-resemblance is a response-dependent affair, and Mary somehow learns about the colors by directly learning about her own color experiences (rather than the reverse), we would face the question of how Mary learns facts about her own color experiences. For each account I will discuss below of how Mary learns allegedly response-independent facts about colors, there is an analogous account of how Mary has "direct access" to facts about her own experiences. And the same puzzles would arise: puzzles about the *scope* of such access, why there is apparently *indefeasible justification* in some cases but not others, why experience *necessitates* belief (or inclination to believe) in some cases but not others, and so on.[6]

2.1. The Property-Acquaintance Account

The first account we will consider is also the simplest. Johnston says Mary's being *aware of* the colors is a necessary condition on her having epistemic access to them. The first account says it is also sufficient. More exactly:

> *Property-Acquaintance Account*: Mary has immediate (non-belief-based) justification for believing blue_{17} resembles purple_{21} more than yellow_{34} merely by virtue of being acquainted with (aware of) these colors, even though they are uninstantiated.

I have two points.

First, the Property-Acquaintance account requires that Mary is aware of colors, even though they are uninstantiated. It is natural to think that

this is incompatible with negative disjunctivism. For instance, Johnston and Hawthorne and Kovakovich suggest in the passages above that disjunctivism is incompatible with the intuition that Mary is aware of or "encounters" the colors. Now, if they are right, the epistemological argument we are now examining would actually be superfluous; we could rule out disjunctivism because it is incompatible with obvious facts about hallucination. But they are not right. There is no incompatibility. The negative disjunctivist could say that Mary stands in an awareness relation to (for instance) uninstantiated blueness in Plato's heaven just as the intentionalist Johnston does. He will just give a different account of this than the intentionalist. The intentionalist might say that, even though blueness is an uninstantiated *abstractum*, the awareness relation Mary bears to it is a physical tracking relation: x is in a state that is suitably poised to influence belief/desire and that *would be* caused by the instantiation of y under optimal conditions. Or he might say it is a primitive relation.[7] By contrast, the disjunctivist will say it is the following relation: x is in a state reflectively indiscriminable from seeing instantiations of y. In other words, he can analyze *Mary is aware of the (uninstantiated) color red* the same way he analyzes *Mary has an experience as of a red object*, namely, in terms of indiscriminability from the veridical case.

Why then do Johnston and Hawthorne and Kovakovich say there is an incompatibility? In the passage above, Hawthorne and Kovakovich imply Mary *encounters* blueness. But what do they mean by 'encounters'? Maybe they have in mind a sense datum interpretation, on which she encounters an *instance* of blueness literally before her mind. Of course, disjunctivism is incompatible with *this*. But today most would reject this, and with good reason. On another interpretation, they mean she is aware of blueness in a sense that does not require that she is aware of an instance of blueness before her. But if that's the right interpretation, then I do not see why the disjunctivist cannot accept it, and give it a gloss in terms of indiscriminability accordance with his theory.

My *second* point is that in any case the Property-Acquaintance Account is mistaken. The problem is that it does not explain why awareness of properties should ground justification to believe some propositions about those properties but not others. If you are aware of a color you might have a justification for believing it resembles another color but not for believing it is correlated with reflectance R. If you are aware of indefinitely many colors in a natural scene, you might have a justification for believing some propositions about their resemblance-orders (obvious ones), but not *all* such propositions (very unobvious ones). Suppose Mary is aware of a spectrum of colors going from red to orange, so that she cannot distinguish adjacent shades, and has no justification for believing that they are distinct. On a natural view, at least some of the adjacent shades she is aware of are nevertheless distinct. So it is implausible that you have a justification for

believing certain propositions about some properties merely by virtue of being aware of the properties, as on the Property-Acquaintance Account, because it does not explain why you have a justification for believing those propositions and not others.

These cases raise a question: why is it that in having experiences one has a justification for believing some propositions and not others? Call this the *scope question*.[8]

2.2. The State-Acquaintance Account

On the State-Acquaintance Account, by contrast to the Property-Acquaintance Account, it is acquaintance with particular *instantiations* of properties and relations that grounds immediate justification: necessarily, if one is acquainted with the state of *a* being *F*, or *a* and *b* standing in relation *R*, then this grounds one's having immediate *prima facie* (propositional) justification for believing *a* is *F*, or *a* and *b* stand in relation *R*. A *state* (or *fact*) is the instantiation of a property or relation. States are the truth-makers for true propositions.

Russell, Fumerton and Chalmers use acquaintance with experience to explain introspective justification. Johnston and some disjunctivists appeal acquaintance with first-order states (for instance the state of something before one being purple_{21}) to explain the justification of first-order beliefs (for instance, the belief that something is purple_{21}) in veridical cases.[9] The State-Acquaintance Account enlists acquaintance to explain the justification of Mary's second-order beliefs about colors in a hallucinatory case. Of course, unless we recognize peculiar hallucinatory objects, we should say that in this case, by contrast to a veridical case, Mary is not acquainted with *first-order states*, for instance the state of something before her being purple_{21}. It merely seems to Mary that she is so acquainted. (On standard proposition-based intentionalism, this is how it seems to her because she "sensorily entertains" the false first-order proposition *that something before her is* purple_{21}. On Johnston's property-complex intentionalism, this is how it seems to her because she is aware of the uninstantiated property *being a* purple_{21} *object at viewer-relative place p*.) But we might say that with sufficient attention Mary can become acquainted with *second-order states* involving universal properties, for instance, the state of purple_{21} being roughly 80% bluish and 20% reddish, and various resemblance-states. Even though Mary is hallucinating, such states obtain and are possible objects of acquaintance. So:

> *The State-Acquaintance Account*: Mary has immediate *prima facie* justification for believing that blue_{17} resembles purple_{21} more than yellow_{34} by virtue of being acquainted with the state that serves as the truth-maker for this proposition.

The State-Acquaintance Account might answer the scope question that undermined the Property-Acquaintance Account. In experience we have immediate justification for believing some propositions but not others, because we are acquainted with some states but not others.[10]

I have two points about the State-Acquaintance Account.

The *first* point is that it is compatible with (negative) disjunctivism as well as intentionalism. This counts against Johnston's anti-disjunctivist Incompatibilist Claim. On disjunctivism, by contrast to intentionalism, Mary has an experience as of certain objects because she is in a state reflectively indiscriminable from seeing such objects. Why couldn't he say a "positive" condition is also present, namely intellectual acquaintance with second-order states involving uninstantiated universals?

One might worry that the disjunctivist becomes vulnerable to a screening off argument. If Mary is acquainted with second-order states in hallucinating, she is also acquainted with them when she has the success ("naïve realist") property of actually seeing the kind of objects pictured in Figure 1. In other words, such acquaintance is a common factor. The worry is that the disjunctivist must now say that, in the successful case, it is this common factor, not the success property, that determines the contours of Mary's conscious experience, against his naïve realism. But the disjunctivist who accepts the State-Acquaintance Account has replies. (i) It is false that in the successful case Mary's merely being acquainted with the second-order states (e.g., blue_{17} resembling purple_{21} more than yellow_{34}) could determine the character of her experience. For instance, it is not enough to determine the *spatial* character of her experience. Thus, in the successful case, the success property of Mary's actually seeing first-order states involving the spatial layout of objects would play an essential role in determining the character of her experience. It would *not* be "screened off" by her acquaintance with second-order states. (ii) Acquaintance with second-order states might be an intellectual achievement, requiring attention and abstraction. In that case, it is in any case ill-suited to ground phenomenology.

My *second* point is that the State-Acquaintance Account faces several serious problems. The first two are metaphysical problems, while the second two are epistemological.

First, as noted, arguments due to Pap, Jackson and Lewis strongly suggest that states involving the resemblances of colors and shapes are acausal abstract states involving abstract objects, which are uninstantiated in the Mary case. Previously, I mentioned a "tracking account" of acquaintance with uninstantiated *properties* in terms of being in a state that *would be* caused by the instantiation of the property under optimal conditions. But acquaintance with *states* involving resemblances among the properties cannot be so explained, if the states *never* enter into to causal relations.

There is a metaphysical problem in the vicinity for everyone, one that must have some solution. If propositions about resemblances among

properties report acausal facts about *abstracta*, then how can we explain the following regularity: generally, if we believe *p*, and *p* is a such a proposition, then *p* is true? It is hard enough to explain how we manage to have beliefs about *abstracta* at all, much less reliably true ones. Since this problem arises for all accounts of the Mary case, including the "dogmatist" accounts to be discussed below, I will not mention it again.

This resembles the Benacerraf-Field problem about mathematics. Interestingly, the usual solutions in the mathematical case may not apply here. In some ordinary sense, while hallucinating, Mary can *literally see* that blue_{17} resembles purple_{21} more than yellow_{34}, so Field's Error Theory would be even more implausible here than in the mathematical case. Further, as noted, Pap, Jackson and Lewis argue that propositions about resemblances among properties are not *a priori* equivalent to any easily accessible propositions about the concrete world, so the *Neo-Fregean* solution to the Benacerraf-Field problem would seem not to work on this case either.[11] The apparent inability of the Error Theory and Neo-Fregeanism to solve the problem of our access to abstract objects in non-mathematical cases might to some extent undercut the argument for accepting them in the mathematical case.

Second, many think that, even if we cannot avoid them entirely, we should minimize "brute necessities": *very roughly*, necessities that do not follow from "real definitions" of the properties and objects involved. Thus many object to brute, unHumean necessary connections between distinct states. (An example would be Moorean supervenience of primitive goodness on natural properties.) But acquaintance theorists must multiply them. Intuitively, it is metaphysically necessary that, if a believer possessed of the concept of resemblance has an experience of blue_{17}, purple_{21}, and yellow_{34} in proximity, as Mary does, she has a justification for believing that blue_{17} resembles purple_{21} more than yellow_{34}. So acquaintance theorists must say this experience necessitates acquaintance with the corresponding resemblance-state. Similarly, he must say severe pain necessitates acquaintance with the instantiation of the pain-experience by oneself; acquaintance is a necessary intermediary between the pain and the justified belief. Yet they say the acquaintance is distinct from the experience. Indeed, Fumerton and Chalmers say it is primitive. So they need brute necessary connections. Even if the acquaintance theorist swallows this, he faces a distinct explanatory burden. For experience doesn't automatically necessitate acquaintance with *all* the states involved in the experience: extremely unobvious resemblance-states, states involving the precise number of presented sensible properties, states involving ratios among loudness-levels, states involving barely noticeable pains, etc. (Otherwise, one would have a justification to believe countless complicated things, contrary to fact.) Why, as a matter of metaphysical necessity, does experience yield acquaintance with *some* states (the obvious ones) *but not others?*

The second problem is this. Intuitively, if you are aware of (say) twenty colors, you have *more* immediate justification for believing some true resemblance-order propositions (the obvious ones) than you have for believing others (the less obvious but still true ones), even after you have directed full attention to the corresponding resemblance-order states. This adds to the *scope question*. The acquaintance theorist is hard-pressed to explain this. For instance, we presumably are not "more acquainted with" some states than others. We are simply acquainted with a state or not. Acquaintance cannot fully explain the facts about immediate experiential justification, because acquaintance is "binary" whereas the facts about immediate experiential justification are graded.[12]

The third problem concerns indefeasibility. *Prima facie,* Mary's justification for believing that blue_{17} resembles purple_{21} more than yellow_{34} is *indefeasible*: very roughly, as long as she retains her present vivid experiential grounds, her degree of (propositional) justification for believing this proposition does not diminish, no matter what other evidence she acquires. (The same applies to her justification for believing the first shape resembles the second more than the third.) Suppose an evil demon says he is causing her to hallucinate, and that there are no colored physical or mental objects before her. Then she can say 'but my belief is not about any particular colored (or shaped) objects—it's about the colors (or shapes) themselves'. Again, suppose she hears arguments against the proposition that that blue_{17} resembles purple_{21} more than yellow_{34} from a nominalist, or from a color physicalist who holds that the colors are reflectance properties that don't stand in the relevant resemblance-order. Or suppose an apparently omniscient demon whom Mary knows to have an amazing record of telling truths just tells her that this proposition is false. In certain mood, I feel that she does not lose (overall) propositional justification for believing it. (Some will say that, in response to the physicalist, Mary should conclude that her demon-proof belief is about resemblances among color *appearances* rather than colors. But I tend to think her demon-proof belief is about the colors, and will continue to assume this for convenience.)[13]

Friends of acquaintance like Fumerton and Chalmers apparently believe acquaintance explains indefeasibility. But this seems wrong. Granted, on this account, Mary's justification for believing blue_{17} resembles purple_{21} more than yellow_{34} is *infallible*: the evidential ground of the justification (acquaintance with the state) *relevantly entails* (in the sense of relevant logics) the truth of the belief. But infallibility does not entail *indefeasibility*.

To bring this out, consider that in *other* cases acquaintance does not bring indefeasibility. Consider *Mary with a twist*. Suppose as before that Mary has an experience of the scene depicted in Figure 1. But now pretend that she is acquainted with the *first-order state* of an object being blue_{17} and round as well as the *second-order state* of blue_{17} resembling purple_{21} more than yellow_{34}. Maybe she is having a *successful* experience, and she is

acquainted with a *physical object* being $blue_{17}$ and round, as contemporary naïve realists would say. Or maybe she is having a hallucinatory experience, as in the original case, but she is acquainted with a *sense datum* being $blue_{17}$ and round, as traditional acquaintance theorists like Russell and Price would have said.[14] In either case, her acquaintance with the first-order state does not yield indefeasible justification that this state obtains. For suppose an apparently omniscient demon presents her with strong empirical evidence that there is no *physical* object present (e.g., he points out nothing is there to touch), and strong philosophical evidence (based on physicalism, and puzzles about sense data concerning indeterminate and impossible experiences) that there is no *mental* object in front of her (she's just related to a false intentional content). Since we are pretending Mary *is* acquainted with an object being $blue_{17}$ and round, this evidence would be *misleading;* but Mary would not know this, and the evidence would be very strong. So her overall (propositional) justification for believing that a $blue_{17}$, round object is present would go down. Indeed, she would lose *knowledge.* The acquaintance theorist must recognize other cases of acquaintance without indefeasibility. If one can be acquainted with *unobvious* states of the form *X just barely resembles Y more than Z* as well as obvious ones, this only yields defeasible justification: being told there was a psychophysical experiment in which most subjects instead said that *X* resembles *Z* more than *Y* would reduce one's justification.

So, cases of acquaintance without indefeasibility show that the claim that Mary is acquainted with state of $blue_{17}$ resembling $purple_{21}$ more than $yellow_{34}$ is insufficient *by itself* to explain why she has indefeasible, demon-proof justification for believing it obtains. (Incidentally, cases of acquaintance without indefeasibility also cast doubt on the acquaintance theorist's explanation of cases of indefeasible *introspective* justification in terms of acquaintance with experiences.) Maybe in the end we should reject the indefeasibility intuition.[15]

2.3. Perceptual Dogmatism

On this account, there is a unique non-cognitive, non-factive relation between subjects and propositions *R* built into experience (even the experience of creatures incapable of thought). Call it 'sensorily entertaining'. Further, necessarily, if a believer stands in this relation to a proposition, this itself grounds his having immediate *prima facie* justification for believing this proposition. It is up to the perceptual dogmatist to say more about sensorily entertaining. Note that one can bear it to false propositions. By contrast, one can only be acquainted with actually obtaining states. So perceptual dogmatism is potentially more liberal than acquaintance theories concerning the ground of immediate justification.

The perceptual dogmatist will say we sensorily entertain first-order propositions attributing colors and shapes to objects. He might also say

we sensorily entertain second-order propositions that characterize those color and shape properties (e.g., that $blue_{17}$ resembles $purple_{21}$ more than $yellow_{34}$). In hallucination, the first-order propositions are false. But the second-order propositions are true, as noted before. So:

> *The Perceptual Dogmatist Account:* Mary has immediate *prima facie* justification for believing the (true) proposition that $blue_{17}$ resembles $purple_{21}$ more than $yellow_{34}$ by virtue of "sensorily entertaining" this proposition.

Like the State-Acquaintance Account, this account helps with the scope question that undermined the Property-Acquaintance Account. For when one is visually aware of some items one does not sensorily entertain all true propositions about them.[16]

I have two points about the Perceptual Dogmatist Account.

The *first* point is this. The Perceptual Dogmatist Account clearly goes well with standard proposition-based intentionalism (as opposed to Johnston's property-complex intentionalism).[17] However, it is also compatible with negative disjunctivism. This counts against Johnston's anti-disjunctivist Incompatibilist Claim.

This suggestion may seem strange, because many disjunctivists *apparently* deny a claim built into the Perceptual Dogmatist Account, the claim that experiences have propositional contents. But I think the debate over whether experiences have contents has been somewhat confused. What disjunctivists deny is only the intentionalist claim that the *fundamental* nature of experience is to be characterized in terms of a relation to a content. They deny that experiences have contents under what I have elsewhere called the *identity conception*. But on weaker conceptions they can surely accept that experiences have contents, in other words, that we "sensorily entertain" contents.[18] For instance, they might say that you sensorily entertain the proposition *that something is F* just in case you are in a state that cannot be discriminated by reflection from seeing the *F*-ness of something. Indeed, *given* this stipulative definition of 'sensorily entertaining', if disjunctivists believe in propositions, they *must* say that, if you see or hallucinate a red thing, you count as 'sensorily entertaining' the proposition that a red thing is present. So disjunctivists could say that Mary sensorily entertains the proposition that $blue_{17}$ resembles $purple_{21}$ more than $yellow_{34}$, and so has immediate justification for believing it, in the sense that she is in a state reflectively indiscriminable from seeing the state of actually seeing $blue_{17}$ resembling $purple_{21}$ more than $yellow_{34}$.

In any case, this issue is irrelevant, because the Perceptual Dogmatist Account does not really require that experiences have contents. The basic idea is that in successful and unsuccessful experience things perceptually seeming a certain way provides immediate *prima facie* justification for believing that they are that way. There is no reason why the disjunctivist cannot accept

this "dogmatist" claim as well as the intentionalist, though they explain perceptual looking in different terms. This dogmatist claim is also consistent with the typical disjunctivist's claim that in the successful case we have an additional justification we don't have in the unsuccessful case, thanks to acquaintance with the world.[19]

My *second* point is that, even for intentionalists who recognize experiential content, the Perceptual Dogmatist Account faces many problems. The first two target the claim that we sensorily entertain *second-order* propositions at all. The second two raise epistemological worries that arise even if we grant this claim.

First, suppose you are aware of twenty colors in a natural scene. There are innumerable true propositions about them of the form *X is more like Y than Z*. Maybe on reflection you are disposed to *believe* some of them. But it is implausible that your *experience* represents all or even any of them. The visual system is simply not that sophisticated.

Second, suppose we accept, as I think we should, a strong form of intentionalism on which you sensorily entertain a proposition only if it enters into the constitution of phenomenology. Then the hypothesis that we sensorily entertain second-order propositions is implausible, because sensorily entertaining first-order propositions is enough to determine the phenomenology of experience.

Third, the Perceptual Dogmatist Account of Mary's justification is part of a more general perceptual dogmatism about all perceptual justification in general. But perceptual dogmatism faces well-known boot-strapping and Bayesian problems.[20]

Fourth, intuitively, if you are aware of (say) twenty colors, you have *more* immediate justification for believing some (second-order) propositions about their resemblances (the obvious ones) than you have for believing others (the less obvious but still true ones). Similarly, some *first-order* propositions about objects seem more obvious than others. Like the State-Acquaintance Account, the Perceptual Dogmatist Account is hard-pressed to explain the graded character of immediate perceptual justification. For instance, we presumably do not *sensorily entertain* some propositions "more than" others (it is unclear what that could mean): we just either sensorily entertain a proposition or not. Sensorily entertaining propositions cannot fully explain the facts about immediate perceptual justification, because sensorily entertaining is "binary" whereas the facts about immediate perceptual justification are graded.

Fifth, as noted, one might think that Mary's justification for believing first-order propositions is always defeasible while her justification for believing second-order propositions is sometimes indefeasible. The Perceptual Dogmatist Account does nothing to explain this apparent epistemic difference, for it holds that the source of the justification is the same.[21]

2.4. Intellectual Dogmatism

Roughly, on this account, there is a unique, non-factive, cognitive relation between subjects and propositions *R* (perhaps not analyzable in terms of belief) such that, necessarily, if one stands in this relation to a proposition, this grounds one's having immediate *prima facie* justification for believing that proposition. Let me introduce the theoretical term 'intuiting', defined as the relation that has these features (if such there be).

The Intellectual Dogmatist Account of Mary's justification adds that when Mary has her hallucination she also undergoes a distinct cognitive state: she intuits that blue_{17} resembles purple_{21} more than yellow_{34}. (Maybe she intuits other propositions, such as the controversial proposition that the colors necessarily exclude.) So:

> *The Intellectual Dogmatist Account*: Mary has immediate *prima facie* justification for believing that blue_{17} resembles purple_{21} more than yellow_{34} by virtue of *intuiting* this proposition.

This differs from the Perceptual Dogmatist account of Mary's justification. Sensorily entertaining is allegedly built into all experience, even the experience of creatures incapable of thought. By contrast, intuiting is an intellectual act requiring the deployment of concepts. So intuiting is distinct from sensorily entertaining. (Further, intuiting is not a determinable with sensorily entertaining as a determinate.) The Intellectual Dogmatist Account has two advantages over the Perceptual Dogmatist Account. First, unlike the Perceptual Dogmatist Account, the Intellectual Dogmatist Account does not require the dubious claim that we *sensorily entertain* complex second-order propositions in experience—only that we *intuit* them in thought. Second, while we noted that it may be implausible that sensorily entertaining comes in degrees, it might be more plausible that intuiting ("intellectual seeming") does. So, unlike the Perceptual Dogmatist Account, the Intellectual Dogmatist Account may explain the graded character of our immediate justification for believing second-order propositions. It is worth mentioning that a combination view is possible: *sensorily entertaining* first-order propositions might explain ordinary perceptual justification, and then *intuiting* more complicated second-order propositions might explain the justification for believing such propositions.

I have two points.

First, intellectual dogmatism is perfectly compatible with negative disjunctivism. The negative disjunctivist holds that when Mary hallucinates her experience is grounded in a negative condition: that of being in a state that cannot be discriminated by reflection from seeing. The negative disjunctivist already holds that certain positive cognition conditions are also present: for instance, she believes certain propositions. So there is no reason why he

cannot say that she also intuits certain propositions. This counts against Johnston's Incompatibilist Claim.

My *second* point is that, while having advantages over the Perceptual Dogmatist Account, the Intuitive Dogmatist Account is also problematic, for three reasons.

First, the Intellectual Dogmatist Account faces the same kind of metaphysical problem as the State-Acquaintance Account. The intellectual dogmatist will presumably say that it is metaphysically necessary that, if a believer with the concept of resemblance attentively experiences blue_{17} resembling purple_{21} more than yellow_{34}, then he will be in the distinct state of intuiting the obvious truth that blue_{17} resemblings purple_{21} more than yellow_{34}. (Similarly, he might say having excruciating pain necessitates its intellectually seeming to one that one is in pain.) Absent some explanation, this will be a 'brute' necessity. Further, having an experience certainly does not necessitate intuiting *unobvious* but true resemblance-order propositions (even once those propositions are entertained). So the proponent of Intellectual Dogmatism faces an additional explanatory burden: *Why does the necessary connection hold in some case and not others?*

Another modal problem is this. We can intuit *some* necessarily false propositions, for instance the naïve comprehension principle. But it appears metaphysically impossible that we should intuit others, for instance that blue_{17} resembles $\textit{yellow}_{34}$ more than purple_{21}. Why?

Everyone faces similar problems about *belief*. *Some* experiences metaphysically necessitate (in believers) an *inclination to believe* (or maybe even outright belief in) *some* things but not *others* about the external world and about those very experiences. Just as there is a scope problem regarding the epistemic connection between experience and justification, so there is a scope problem regarding the modal connection between experience and belief. It seems difficult to explain why there should be a metaphysically necessary connection in *particular cases but not others* in terms of any *general* theory of experience or belief. But those who recognize a primitive *intuiting* relation distinct from *inclining to believe* from face a distinct and (since they hold the relation is *primitive*) even more intractable problem.[22]

Second, although intellectual dogmatists have not addressed them, the standard boot-strapping and Bayesian problems for perceptual dogmatism have equal force against intellectual dogmatism.[23]

Third, friends of intuition draw parallels between perceptual justification and intuitive justification. But whereas perceptual justification is always defeasible, intuitive justification (if such there be) seems to be indefeasible in some cases but not others. It is unclear how intellectual dogmatists might explain this (but see note 21).

2.5. Two Morals

The first moral is that Johnston's epistemological argument against disjunctivism is hard to defend. Why is this? Maybe, in order to have immediate *justification* for believing some propositions, all you really need are states that are "non-arbitrarily" linked to those propositions (and maybe "phenomenally present them as being true" in Jim Pryor's sense).[24] Even in the hallucinatory case, such states are available to the disjunctivist as well as the intentionalist.

The second moral is that the fact that hallucination can justify beliefs about uninstantiated colors and shapes creates some unique puzzles. (i) The relevant beliefs are beliefs in necessary propositions about *abstracta* (colors and shapes) yet their justification appears to be experience-based rather than *a priori*. (ii) The Benacerraf-Field problem looms, but here the usual solutions (Field's Error Theory, Neo-Fregeanism) appear not to work. (iii) In *some cases but not others* the justification *appears* indefeasible, but this is hard to explain. (iv) In *some cases but not others*, experience *metaphysically necessitates* (in believers) the inclination to have the relevant beliefs (perhaps sometimes it necessitates outright belief). It seems difficult to explain this in terms of a general theory of experience or belief.

I think there is a promising *non-epistemological* argument against negative disjunctivism about hallucination in the vicinity of Johnston's epistemological argument. Hallucination not only can *justify* beliefs about the world; it also can *explain* the capacity to have such beliefs. I think this *explanatory* connection might be incompatible with negative disjunctivism. But since my concern here is with epistemological arguments against disjunctivism, I will not discuss this argument here (but see Pautz 2008, sect. 4; for a reply, see Brewer forthcoming, chapter 5).[25]

3. Access to Sensible Properties in Veridical Experience

Mark Johnston's argument against disjunctivism was about whether the disjunctivist can explain our access to facts about the phenomenal structure of sensible properties in hallucination and illusion. But of course the disjunctivist holds that in ordinary experience we also have access to facts or states involving sensible properties of a quite different sort: we normally directly perceive the instantiation of sensible properties by external items, for instance the whiteness of a fence or the astringency of the calvados.

Now I turn to an argument of my own against disjunctivism which concerns our alleged access to such states. The argument, which I call the *missing explanation argument*, is that the disjunctivist cannot explain the fact (as he takes it to be) that we and other sentient creatures regularly perceive the *true* sensible properties of things. So, whereas Mark Johnston's argument

was about whether the disjunctivist can explain how certain of our beliefs about sensible properties are *justified* or *constitute knowledge*, my argument is not in the first instance about the justification of our beliefs about sensible properties. Rather it is about whether the disjunctivist can explain the kind of regular direct perceptual contact with the world which he thinks *grounds* that justification in favorable circumstances.

My missing explanation argument against disjunctivism depends on *three claims*. I will first introduce and defend them (§§3.1–3.3), then explain the argument (§3.4), and finally explain how *intentionalism* can avoid it (§3.5).

3.1. Disjunctivism and Response-Independence

My first claim is that disjunctivism goes best with a *response-independent view* of sensible properties, as opposed to a Lockean *response-dependent view*. This will be important to my missing explanation argument. On a response-dependent view, normal perceptual success is easily explained, for on this view external items are guaranteed to have the sensible properties they normally seem to have. But this explanation of perceptual success is unavailable under a response-independent view which holds that the sensible properties of external items are *not* constitutively dependent on how they perceptually seem to us. So if the disjunctivist must accept a response-independent view, he needs another explanation of the fact that we and all other sentient creatures regularly perceive the *true* sensible properties of things. It will eventually emerge that he cannot give one.

Disjunctivism goes best with a response-independent view for three reasons. In the case of color, they are as follows. First, disjunctivists hold that in certain cases what color experiences we have is fixed by what colors things out in the world actually do have. So they cannot say that what colors things have is fixed by what color experiences they are disposed to produce in us, as a response-dependent view would have it. They must say colors are response-independent. Second, disjunctivists hold that we perceive the instantiations of colors. But there are worries about whether dispositions are perceivable. So disjunctivists should say that colors are not dispositions but the detectable response-independent grounds of such dispositions. Finally, disjunctivists are enamored with common sense, and the response-independent view might be the common sense view.

Some disjunctivists extend their naïve realism to the experience of sensible properties other than colors. Here too they need a response-independent view. In the case of smell, the idea would be that odor clouds have (and had before we evolved) certain response-independent smell-properties. In successful cases, we perceive the instantiation of these properties by (diffuse) clouds in our navel cavities. In smell illusions (due to adaptation, etc.) and hallucinations, we are merely in a state reflectively indiscriminable from so perceiving.

Campbell (in the opening quote) says tastes are also "objective". But the extension of naïve realism to taste faces two problems. First, we have an *esse est percipi* intuition about tastes: intuitively, they are not response-independent properties of foods or tongue-regions that could be instantiated even when no one has taste-experiences. (Compare pain-qualities.) Second, although we experience taste-qualities *at* or *in* our tongues when foods contact them, taste-qualities do not even appear to be *properties* that *belong to* foods or our tongues or indeed anything at all. But suppose Campbell is right that naïve realism is somehow workable even here. Maybe when a foodstuff touches your tongue, a new non-relational, monadic quality is instantiated there; and, in the successful case, you perceive its instantiation. In gustatory illusions (e.g., due to top-down processing or adaptation) and hallucinations (maybe a tongue-less man could have phantom tastes), you merely ostensibly perceive a taste-property in your tongue, one not instantiated there.

It may be that different animals perceive colors that we cannot imagine, belonging to different color-spaces. Some disjunctivists might say that objects have these alien colors in addition to human colors. In addition, against their allegiance to common sense, some might take the *pluralist view* that every object has a small cluster of very closely-resembling colors belonging to *our single color-space*; for instance, a color chip is both pure blue_{17} and bluish-red_{19}.[26] They might say similar things about other sensible properties. My argument is *neutral* on these matters. It only requires that, for every quality-space, an external item has *at most* a few, closely-resembling sensible properties within that quality-space, so that there are countless sensible properties within the quality-space it does *not* have. So, for instance, an object is not both orange and green. I will take this to be part of any sensible response-independent view.

Some disjunctivists, for instance Campbell, argue that sensible properties do not reduce to (are not identical with) reflectance properties, chemical properties, and so on; rather, they are response-independent, *primitive* properties that supervene on (emerge from) such physical properties. Campbell's argument invokes a dubious "revelation" thesis. A better argument for thinking disjunctivists need primitivism is based on the fact that the resemblance relations and other structural features possessed by colors, smell-qualities, and so on, aren't possessed by the corresponding response-independent physical properties.[27] Evidently, realist primitivism is dualism transposed to the external world. So, if disjunctivism requires this view, it metaphysically objectionable. The missing explanation argument will provide yet another reason to reject disjunctivism.

3.2. Internal-Dependence

Internal-dependence is the second claim on which my missing explanation argument against disjunctivism depends. First I will discuss some cases of

internal-dependence. Then I will indicate why internal-dependence will be important to my argument. Finally I will show that disjunctivists can and should accept it.

Color Vision. Recall the type of facts about phenomenal structure that we considered in connection with Johnston's argument. Some colors are unitary: reds, greens, yellows and blues. They "contain" only one hue-component, making them perceptually prominent. All other are binary, having two hue-components. For instance, in the example we considered, the color purple_{21} Mary hallucinates is a binary color that is roughly 80% bluish and 20% reddish. Some binary combinations are excluded. There are no red-greens or yellow-blues. In addition, the colors we experience resemble more or less closely. For instance, in the Mary case, blue_{17} resembles purple_{21} more than yellow_{34}.

Why do we experience unitary and binary colors when we do? Why do experience colors that stand in the resemblance-orders they do? Nothing about the reflectances tracked by our visual systems explains these facts. The textbook explanation brings in internal factors. We have three color-receptors on the retina: short, medium and long. According to the "opponent-process theory", their outputs are summed and differenced to create the R-G channel and the Y-B channel. Each is a system of neurons with a base rate of firing. When the R-G channel is put into a state of activation above base-rate, we perceive a reddish color. When it is put into a rate of firing below base-rate, we perceive a greenish color. Likewise the Y-B channel is correlated with yellowish and greenish experiences. So, we experience a unitary color when one channel is active and the other is inactive, and we experience a binary color when both channels are active. We do not experience red-greens or yellow-blues because of neural opponency. We experience colors that stand in certain resemblance-orders, because we undergo opponent channel states that stand in congruent resemblance-orders.

The textbook explanation might need to be revised. Chromatically-opponent neurons have been discovered in the LGN and were once believed to realize the hypothesized R-G and Y-B channels. But their activity is not perfectly correlated with color experience. As for the cortex, for many years researchers could not find a neural representation for unique hues. However, Conway and Stoughton (2008) have recently determined that the population distribution of color-tuned neurons ("glob cells") in the macaque's inferior temporal cortex contains three prominent peaks roughly corresponding to human subjects' experiences of unitary red, unitary green, and unitary blue (see Figure 2). The distribution contains only a weak bulge corresponding to the experience of unitary yellow, which Conway and Stoughton attribute to a lack of focal yellow in the stimulus set. The three prominent peaks correspond to the color samples humans judge to be most saturated, with the *size* of each of the peaks corresponding to *degree* of saturation, suggesting

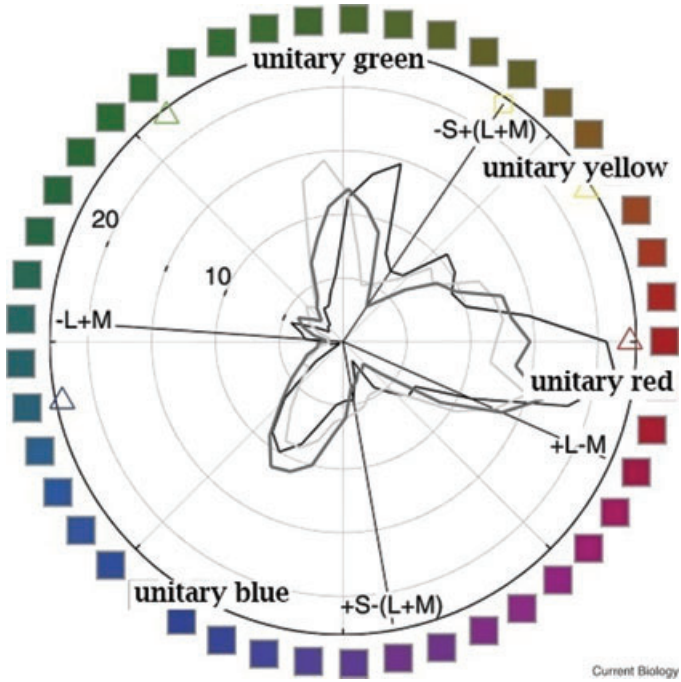

Figure 2: Histogram of optimal color tuning of glob cells recorded in alert macaque monkey shown as a polar plot. The squares at the perimeter represent the color samples used; I have indicated the rough locations of the samples judged "unitary" by humans. There are peaks in the histogram at these locations. In addition, the *size*s of the peaks correspond to the color samples' apparent *degrees of saturation*. Reprinted (with modifications) from Conway and Stoughton (2008), with permission from Elsevier.

that both hue and saturation depend on the relative number of glob cells. The relative size of each of the peaks also corresponds to the frequency with which these color terms is adopted by language. There were even luminance-dependent shifts in the peaks (most prominent for green), consistent with the so-called "Bezold-Brücke" hue-shift. In another significant recent study, Brouwer and Heeger (2009) found that, in the inferior temporal cortex, similar color experiences are correlated with similar neural responses and that color experiences are even systematically "decodable" from neural responses. So, while the textbook opponent process model may require revision, we are beginning find robust correlations between neural response and the character of color experience.

The following case illustrates internal-dependence. Maxwell and Mabel belong to different human-like species that evolved separately. They have identical receptor systems. So if Maxwell and Mabel look at an object under

normal conditions, the same reflectance property *R* of the object causes their cortical visual states. But, suppose that, because of differences in their evolutionary history (maybe different foods and predators matter to them), Maxwell and Mabel evolved different *postreceptoral* processing. Maybe their populations of color-tuned neurons "peak" at different places. Maybe *R* sets up "binary processing" in Maxwell and "unitary processing" in Mabel.

Likewise in general. Maxwell and Mabel's cortical states track the same chromatic properties in the external world. But they involve radically different opponent processing. As a result, they order objects by color differently; and objects that Maxwell can easily discriminate, Mabel has a hard time discriminating, and *vice versa*.

These are the physical facts. We can disagree about Maxwell and Mabel's color experiences, given these physical facts. Internal-dependence in color vision is the thesis that in some cases like this Maxwell and Mabel's color experiences would systematically differ, due to the neural and functional differences, *even though they normally track the same response-independent properties in the external world*.

I have two arguments for internal-dependence in color vision. *First,* as previously discussed, the character of color experience is not well-correlated with the character of the reflectances of external objects. By contrast, Conway and Stoughton (2008) and Brouwer and Heeger (2009) show that the unitary character of some experiences, apparent saturation levels, and resemblances and differences among color experiences are congruent with cortical neural responses. So these features of color experiences clearly have something to do with cortical neural responses. Now Maxwell and Mabel differ in the relevant neural responses. Maybe their populations of color-tuned neurons "peak" at different places. Maybe objects that produce similar neural responses in Mabel's temporal cortex produce quite different neural responses in Maxwell's temporal cortex. So there is empirical reason to think they have systematically different color experiences. *Second,* Maxwell and Mabel exhibit innate, systematic differences in sorting, ordering, and discrimination behavior. This is best explained by supposing they have different color experiences.

Taste and Smell. It is well-known that resemblances among tastes and smells are very poorly correlated with resemblances among the corresponding chemical properties of foods and odors. By contrast, resemblances among tastes and smells are remarkably well correlated with resemblances among neural patterns in the brain. Indeed, in a recent study, Howard and coworkers found "that spatially distributed ensemble activity in human posterior piriform cortex (PPC) coincides with perceptual ratings of odor quality, such that odorants with more (or less) similar fMRI patterns were perceived as more (or less) alike" (2009, 932). (See Figure 3.[28])

Now consider the following case. Some berries are non-poisonous and an important food-source to Yum but extremely poisonous to Yuck. So

when Yum and Yuck taste the berries, their taste systems and smell systems undergo radically different cortical neural patterns of the sort shown in Figure 3. The neural patterns Yum undergoes resemble the ones he undergoes when he tastes and smells foods that are healthy for both Yuck and Yum, whereas the neural patterns Yuck undergoes resemble the ones he undergoes when he tastes and smells other foods that are harmful to both Yuck and Yum. And, while Yum is drawn to the berries, Yuck vomits and violently withdraws from them. Yet we can stipulate that Yum and Yuck are similar at the receptor-level, so that, when they taste the berries, their cortical states, although different, track the very same response-independent properties of the berries. Internal-dependence in gustation and olfaction is the thesis that in some such cases the individuals involved would have different taste and

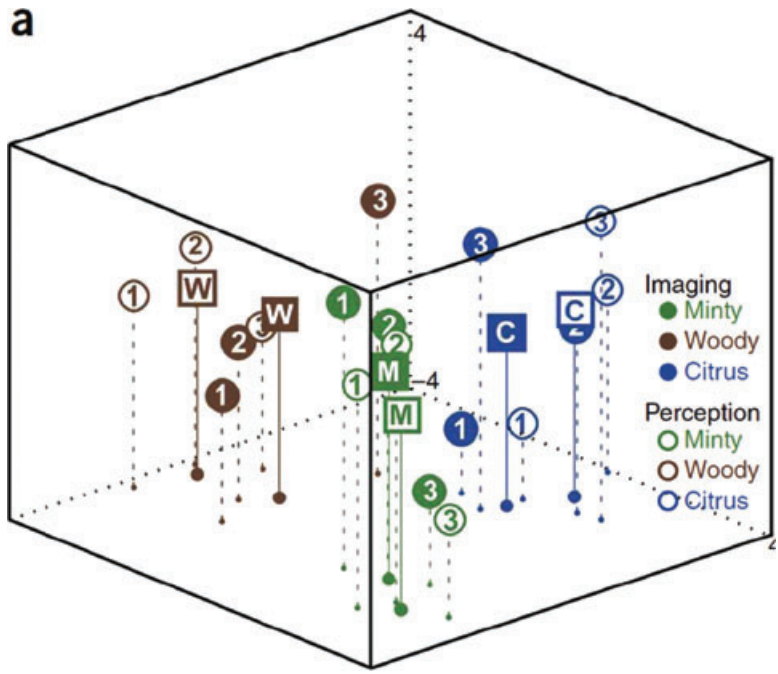

Figure 3: Good correlation between fMRI spatial patterns and perceived odor quality. The group-averaged fMRI data and the perceptual data were each projected onto a common three-dimensional space. Filled circles represent distributed ensemble activations. Empty circles represent odor experiences. Distances represent degrees of similarity. Squares labeled 'M' (minty), 'W' (woody) and 'C' (citrus) represent centroids of each category for the imaging (solid squares) and perceptual (empty squares) data. Degree of similarity (distance) among odor experiences is remarkably well correlated with degree of similarity (distance) among the corresponding ensemble activations.

smell experiences, due to the vast neural and functional differences between them, *even though they normally track the same response-independent chemical properties of foods and odors.* This is plausible, given that the character of such experiences is poorly correlated with the character of the chemical properties tracked but very well correlated with neural patterns (as Figure 3 illustrates). For instance, maybe Yum has a sweet taste experience and aromatic smell experience, whereas Yuck has a horribly bitter taste experience and a putrid smell experience.

Sound. Perceived loudness and pitch are very poorly correlated with the response-independent properties of sound-events, such as amplitude and pitch. Instead, perceived pitch apparently depends on some combination of place coding and temporal coding. And experiments show that loudness is well correlated with the total neural activity evoked by a sound-wave.[29] Now suppose Soft and Loud belong to different species. Their auditory systems are alike at the receptor-level, and their cortical states normally track exactly the same response-independent properties (involving frequency and amplitude) of some sound-event. But, since the sound-event is a mating call to Loud but not to Soft, those cortical states differ in whatever ways are relevant to pitch and loudness. The result is that, by every psychophysical test (involving discrimination, grouping, etc.), they have different sound experiences of this sound-event and others. Internal-dependence in audition is the thesis that they do have different sound experiences, *even though their cortical states normally track the same response-independent properties.*

Call these cases *coincidental variation cases*. In such cases, the response-independent properties tracked by two individuals *coincide* exactly; but (due to different selection pressures) their internal processing and sensorimotor interactions with the environment *vary* radically.

Internal-dependence is nothing but the thesis that (at least in nearby worlds) the right verdict in (many of) these cases is that the individuals involved have different experiences. This is not *internalism*, the controversial thesis that phenomenology is *completely* determined by internal factors, so that even brains-in-vats would have rich phenomenology. Roughly, internal-dependence is the much weaker thesis that internal-functional factors play *some role*. This is compatible with external factors playing a role too. Maybe, for instance, internal factors matter only because they shape output-oriented sensorimotor interactions with the environment. So functionalists and "active externalists" like Alva Noë can and do accept internal-dependence. Other, more input-oriented externalist theories of phenomenology conflict with internal-dependence: for instance, the simple, pure input-based "tracking intentionalism" of Dretske and Tye. But this means we should reject such simple input-oriented forms of intentionalism.[30]

But would *disjunctivists* accept internal-dependence? One might think not, because disjunctivism is radically externalist. Against this, I think disjunctivists can and should accept internal-dependence. I will address

this issue presently. But first let's temporarily suppose that the disjunctivist accepts internal-dependence, so that I can indicate why it will be important to my missing explanation argument against disjunctivism. The reason is that, if the disjunctivist accepts the claim that our experiences of sensible properties are internally-dependent, in addition to the previously discussed claim that sensible properties themselves are response-independent, then he must admit that normal misperception is at least *metaphysically possible*. So he cannot explain why we and other creatures normally accurately perceive the sensible world by claiming that this is somehow guaranteed by the nature of perception.

To see this, suppose that the disjunctivist agrees that in the case described above Maxwell has a desaturated, binary "orange" experience and Mabel has a saturated, unitary "green" experience, in accordance with internal-dependence. Now *some* philosophers will say that, despite having different color experiences, Maxwell and Mabel have experiences as of the very same color under the same level of illumination! They will say that they have different color experiences because of different color qualia, modes of presentation, or presented appearance properties. But *disjunctivists* must reject this view, for it is inconsistent with disjunctivism and its motivations (e.g., experiential transparency, and the naïve view of experience). If they accept internal-dependence, they will not only say that Maxwell and Mabel have different color experiences, they will also say this is because the object *looks orange* to Maxwell and *looks green* to Mabel. (On Martin's account, this follows from the fact that Maxwell's experience is reflectively indiscriminable from seeing the state of a thing being orange whereas Mabel's experience is reflectively indiscriminable from seeing the state of something being green.) If disjunctivists also hold that colors are response-independent and that radically different colors are incompatible, as I previously argued they must, then they must suppose that either Maxwell or Mabel (or both) is a victim of normal misperception of color. At best, only one of them is acquainted with the manifest world.

Likewise, if they accept internal-dependence, disjunctivists will say that Yum and Yuck, and Soft and Loud, experience external items (the odor-clouds, foodstuffs, sound-events) as having *radically different sensible properties* (smells, tastes, loudness-levels and pitches), which we can assume to belong to the *same quality-spaces*. Now, as I previously argued, disjunctivists must take a response-independent view of sensible properties, one on which radically different sensible properties belonging to the same quality-spaces are incompatible. So if they accept internal-dependence, they must say that, in coincidental variation cases, one or the other of the two individuals involved normally radically misperceives the "objective" sensible properties of foods, odors, and sounds.[31]

So disjunctivists who accept internal-dependence cannot explain why we and other creatures normally accurately perceive the sensible world by

claiming that this is somehow guaranteed by the nature of perception. Of course, disjunctivists might simply deny internal-dependence, and assert that perceptual success under normal conditions is somehow guaranteed by the nature of perception. Then my missing explanation argument against disjunctivism would collapse. As a matter of fact, in the quote this paper opens with, John Campbell denies "that our brain makes a big contribution [to experience]". In addition, Hawthorne and Kovakovich and Block have suggested that disjunctivism is *incompatible with* claims in the vicinity of internal-dependence.[32]

So I will conclude my discussion of internal-dependence by arguing that disjunctivism and internal-dependence are indeed compatible, and that the disjunctivist has strong reasons to accept internal-dependence. First I will first consider and dismiss two reasons for thinking that disjunctivism and internal-dependence are not compatible. Then I will describe a disjunctivist theory ("sophisticated selectionism") that makes room for internal-dependence.

One reason for thinking that disjunctivism and internal-dependence are incompatible was suggested to me by John Campbell (personal correspondence). As we just saw, given the disjunctivist's response-independent view of sensible properties, internal-dependence requires possibility of normal misperception. But, on disjunctivism, experience is simply constituted by our relation to the world. Campbell thinks this rules out the possibility of normal misperception ("global illusion", in his words). So it rules out internal-dependence.

This is unconvincing. Disjunctivism holds that having an experience as of an *F* item (object, odor-cloud, sound-event) is a matter of either perceiving the *F*-ness of some item *or* being in some other state that covers unsuccessful experience. Why couldn't we normally be in the "other state"? Of course, the issue turns on the disjunctivist's account of the other state. Campbell himself nowhere ventures an account. But others do. And, contrary to Campbell, their accounts allow for normal misperception. On Martin's account, as we saw, the "other state" is: being in a state reflectively indiscriminable from perceiving the *F*-ness of some item. There is no reason why we could not normally be in such a state, even if no one ever perceives the *F*-ness of anything. In fact, we can have afterimages of *supersaturated red*. Then we are in a state reflectively indiscriminable from perceiving a supersaturated red object. But no one ever actually perceives such an object, because supersaturated red is an *uninstantiated color*.[33] On a different account due to Bill Brewer, in illusion, the "other state" is: perceiving an object which, although not itself *F*, has "visually (or auditorily, etc.) relevant similarities" to an *F*. However this is spelled out, it must allow for such cases of illusion in the absence of successful perception.

I can imagine only one other *prima facie* reason for thinking disjunctivism conflicts with internal-dependence.

The disjunctivist believes in a perceiving relation that individuals bear to external states in the successful case. Of course he would reject any traditional conjunctive *analysis* of this relation in terms of an *experiential common factor* and some causal condition. But, on pain of mystery, there must be something systematic to say about how this relation *supervenes on* our (perhaps subpersonal) cortical neural processing and causal relations to the world. On viewing tomato one perceives its shape (its shape is "laid bare") but not its electric charge. Why? Presumably because one's cortical neural processing is appropriately causally sensitive to its shape but not its charge.

One version of this idea is *simple selectionism* concerning the supervenience-base of the perceiving relation. Very roughly: necessarily, an individual A perceives the state of something being F (orange, elliptical-from-here, etc.) iff A is in an internal subpersonal state N such that (i) N plays the "consciousness-role" (that is, unlike an unconscious, low-level neural state, N involves suitable re-entrant processing, or is poised to influence belief and reasoning, or whatever), (ii) N is suitably caused by something being F, and (iii) N is a "normal response" to something being F. Further, simple selectionism includes naïve realism. So if two individuals perceive the instantiation of the very same external properties (from the same point of view), they have phenomenally identical experiences.

On simple selectionism, the external world is rich with states (determinate color states like *something being* red_{17}, more determinable ones like *something being red*, perceiver-relative states like *something being elliptical from here*, etc.). The brain plays *some* role in determining phenomenal character, because it *selects* which of these external states we perceive.

Yet on simple selectionism the brain does not play the more robust role in determining phenomenal character that "internal-dependence" claims. Consider again the stipulated physical facts in coincidental variation cases. Maxwell and Mabel, Yuck and Yum, and Loud and Soft undergo systematically different cortical neural states, and exhibit radically different behavior. But, although different, their cortical neural states are normally caused by the instantiation of *very same* response-independent properties by objects, foodstuffs, and sound-events: the same reflectance properties, chemical properties, and properties involving amplitude and frequency. On disjunctivism, those response-independent physical properties are identical with or constitute certain response-independent sensible properties: colors, tastes, loudness-levels, pitches. For concreteness, suppose that this element of disjunctivism is correct. In particular, suppose that Maxwell and Mabel's internal processing is caused by the state of the object before them being *orange*; that Yum and Yuck's internal processing is caused by the instantiation of a *sweet* taste and smell in the berries; and that Soft and Loud internal processing is caused by the state of a sound event having a *low* loudness-level and pitch. Then the verdicts of simple selectionism are radically at

variance with internal-dependence. Given simple selectionism, Maxwell and Mabel both perceive the object being orange under the same illumination-level. Likewise Yuck as well as Yum perceives a sweet smell and taste in the berries (despite the question-begging name I gave him!), even though the berries are horribly poisonous to him. And Loud as well as Soft perceives the instantiation of a low pitch and loudness-level by relevant sound-event, even though it is a mating-call to him. Given naïve realism, it follows that they have phenomenally identical experiences of these items. Indeed, given simple selectionism, because their sensory systems are "tuned" to the same external properties, they are constrained to normally have phenomenally identical experiences of all external items. This is so even though the stipulated physical facts include (i) the fact that (due to different selection pressures) they undergo *systemically different neural processing related to experience* and (ii) the fact that they *exhibit innate, fine-grained differences in sorting, affective, and other behavior*. For instance, Yuck's internal neural similarity-metrics (of the sort illustrated in Figure 3) differ from Yum's. And on tasting the berries he withdraws violently and vomits. Yet simple selectionism delivers the incredible verdict that they perceive the very same *sweet* taste and smell in the berries, and in general have phenomenally identical taste and smell experiences of all external items under normal conditions.

So, given "simple selectionism", Campbell is right in denying (in the opening quote) that "the brain makes a big contribution [to experience]" and in claiming that "their [brain processes'] function is just to reveal the world to us". Further, under simple selectionism, *normal misperception is indeed ruled out by the nature of perception*. We were bound to evolve to normally perceive some subset of the sensible properties that were "out there" prior to our evolution, even though in many cases perceiving other sensible properties would have made better adaptive sense. Compare the way in which Hilary Putnam's simple causal theory of representation (or *any* "verificationist" theory of representation) rules out global error of the kind that the brain in the vat (allegedly) is subject to.[34] So, as we shall see (§3.4), by accepting simple selectionism, disjunctivists could avoid my "missing explanation" argument. They could provide what we might call a *naïve externalist explanation* of why all creatures are bound to normally successfully perceive the true sensible properties of all external items.

But then they would be vulnerable to a different argument, for simple selectionism is incompatible with internal-dependence, and internal-dependence is empirically well-supported. I have already discussed the argument for internal-dependence. To underscore the argument, suppose you came across actual cases like those of Maxwell and Mabel, Yuck and Yum, and Loud and Soft. (Indeed, there *are* actual cases resembling coincidental variation cases.) You know that the phenomenal structure of experience is generally poorly correlated with anything in the external, physical world but very well correlated with neural structure (as Figures 2 and 3 illustrate).

You know that the two species differ in the relevant neural respects because of different selection pressures (e.g., what is healthy to one is poisonous to the other). You also know that they exhibit innate, population-wide, fine-grained differences in sorting, ordering and affective behavior. Given these differences, any reasonable person would say that they have systematically different experiences. It seems preposterous to deny this in the name of a controversial philosophical theory (simple selectionism) for which there is no strong argument.[35]

Other cases support internal-dependence over simple selectionism. Suppose Percy and Twin Percy belong to different populations and normally track the same shapes in their environment but undergo different shape processing, so that Percy's shape-related behavior is *appropriate to* the shapes of things whereas Twin Percy's is *systematically inappropriate to* the shapes of things. For instance, on viewing a round object, Twin Percy behaves in ways appropriate to a square object.[36] Nevertheless, on simple selectionism, on viewing the object, both Percy and Twin Percy perceive its roundness, and have the same shape experience. For their cortical neural states, although different, are normal responses to the roundness of the object (at least in the relevant statistical sense of 'normal'). This is incredible.

So the disjunctivist has considerable reason to reject simple selectionism and accept internal-dependence. I will now develop on behalf of the disjunctivist a *sophisticated selectionist view* whereby he might accommodate internal-dependence. On this view, *A* perceives the external state of something being *F* iff *A* is in an internal subpersonal state *N* such that (i) *N* plays the "consciousness-role" (in the sense explained above), (ii) *N* is suitably caused by something being *F*, and (iii) *N matches* the state of something being *F*. Further, "naïve realism" is right: if exactly the same external states are thus "laid bare" to two individuals, they have the same experience.

The difference between sophisticated selectionism and simple selectionism is that sophisticated selectionism places a non-trivial internal constraint on perceiving an external state involving "matching"—a notion the disjunctivist would have to explain. Indeed, although he provides no elaboration, Campbell himself seems to recognize the need for such a "matching" (or "correct adjustment") constraint when he writes that "there is a complex adjustment that the brain has to undergo, in each context, in order that you can be visually related to things around you; so that you can see them, in other words" (2002, 119).

What is "matching" or the "right adjustment"? Of course, the disjunctivist cannot explain matching in terms of the satisfaction of the *propositional content* of an experiential *common factor*. Here is one alternative explanation he might provide. Consider again the case of Percy and Twin Percy. Percy and Twin Percy's internal states are both caused by the roundness of the object before them. Indeed, they are normally caused by roundness. Why then does Percy but not Twin Percy get to perceive the roundness of the

object? The idea is that Percy's internal state "matches" the roundness of the object which causes it (it is the "right" adjustment), whereas Twin Percy's does not (it matches something being square). So Percy gets to perceive the roundness of the object, whereas Twin Percy does not (he presumably has an illusory experience of a square). Maybe, in this case at least, "matching" (or the "right" adjustment) could be understood in *functional* terms. Percy's brain state "matches" the roundness, in the sense that it disposes him to behave in a round-appropriate way. Twin Percy's brain state fails to match the roundness, because it disposes him to behave in a square-appropriate way.

Now the proponent of sophisticated selectionism might add that *A* has an *illusory* experience of something being *F* iff *A* is in an internal subpersonal state *N* such that (i) *N* plays the "consciousness-role", (ii) *N matches* the state of something being *F*, but (iii) *N* is *not* suitably caused by something being *F*. (Of course the suggestion here is compatible with the disjunctivist giving a merely negative account of illusion in terms of indiscriminability from the successful case. In that case, the suggestion is that these clauses specify a supervenience-base for such indiscriminability.) Twin Percy's internal state is caused by the state of something being round. But it "matches" (or is an appropriate "adjustment" to) something being square. So, on sophisticated selectionism, whenever he views a round object he has an illusory experience of something being square.

Similarly, sophisticated selectionism can allow that Maxwell and Mabel, Yum and Yuck and Soft and Loud have different experiences, in accordance with internal-dependence. Consider Maxwell and Mabel. Suppose that the disjunctivist's response-independent realism about sensible properties is correct, and suppose also that the object Maxwell and Mabel view has a binary color, namely orange. The state of the object being orange causes Maxwell to go into internal state *N1* involving "binary" processing, while it causes Mabel to go into internal state *N2* involving "unitary" processing. As a result, their color-related behavioral dispositions are different. As we saw, simple selectionism delivers the implausible verdict that Maxwell and Mabel perceive the same color, and have the same experience, in spite of the radical neural and behavioral differences. For their cortical neural states, although different, are caused by (and indeed are normal responses to) the state of the object being orange. But if he accepts sophisticated selectionism, the disjunctivist can avoid this result. For he might say that, in some sense, Maxwell's "binary" state *N1* (together with his consequent behavior) "matches" the state of the object being orange, a binary color. So Maxwell gets to directly perceive that state. By contrast, Mabel's "unitary" state *N2* (together with her consequent behavior) does not match the state of the object being orange, a binary color. It is not the "right" adjustment, even though it is the adjustment her species evolved to undergo in response to the state of something being orange. Instead, he might say, it matches

something being green. So she does not perceive the state of object being orange, though her state *N2* is appropriately caused by the state of the object being orange. Rather, on sophisticated selectionism, she has an illusory experience as of something being green. Likewise, the disjunctivist who accepts sophisticated selectionism can allow that Yum perceives the sweet taste while Yuck has a merely illusory experience as of a horribly bitter taste, and that Soft perceives the low pitch and loudness of the sound-event while Loud has an illusory experience as of a higher pitch and loudness. Now, in these cases involving "secondary quality" perception, it would be much more difficult for the disjunctivist to make sense of the notion of a "right" adjustment than it is in cases like Percy and Twin Percy involving "primary quality" perception. But perhaps he could make some sense of the notion.

My basic point is independent of sophisticated selectionism. It is that, contrary to Campbell and others, disjunctivism and internal-dependence are compatible in principle. On disjunctivism, colors, tastes, smells, sound-properties and shapes are response-independent. But the disjunctivist could consistently say that whether we *perceive* the instantiation of these properties by external items, or merely have different, illusory experiences of those items, is dependent on internal factors, so that normal misperception is possible. I think that to accommodate internal-dependence he must accept sophisticated selectionism and invoke the somewhat nebulous notion of the "right" internal adjustment. But even if I am wrong, the fact remains that disjunctivism and internal-dependence can be coherently combined.

So, the situation is this. Disjunctivists might reject internal-dependence by accepting something like simple selectionism. This would undercut my "missing explanation argument" by making normally successful perception inevitable, as we shall see (§3.4). But then his view would be mistaken, since internal-dependence is empirically well-confirmed. On the other hand, he could accept internal-dependence, perhaps by accepting something like sophisticated selectionism. Then he is open to the missing explanation argument that I am now developing. My overall argument, then, is best viewed as a dilemma. For now, suppose the disjunctivist takes the horn of accepting internal-dependence, so that I can continue to explain why, if he does so, then he is open to a "missing explanation" argument.

3.3. The Missing Explanation Claim

I call the third and final claim on which my argument depends the *missing explanation claim*.

The disjunctivists who are my target hold that under normal conditions we successfully perceive (roughly) the true sensible properties of all external items. Presumably, they would say the same about *all* terrestrial and (if such there be) extraterrestrial sentient creatures. Further, in such favorable

conditions, the character of the world constitutes the phenomenal character of our experience. Now, some disjunctivists (for instance, Bill Brewer) hold that we never or rarely have visual experiences that are perfectly veridical *in every respect*: one element of the scene might look slightly different from how it is. But they still hold that under normal conditions we either perceive the determinate sensible properties of things, or else perceive sensible properties that are not too far off from them.

So the disjunctivists who are my target hold that under normal conditions we and all sentient creatures perceive (roughly) the true sensible properties of all external items. This sweeping universal regularity in nature would require explanation. Now I argued that disjunctivists must accept the response-independence of sensible quality, and that they also have reason to accept the internal-dependence of sensible quality perception. My missing explanation claim is that *if these things are true, then there is no explanation of the sweeping regularity endorsed by disjunctivists.*

Note that this is a conditional. If one rejects one of the antecedent claims, one might provide an explanation. If one rejects internal-dependence, one might provide the *naïve externalist explanation* of the kind mentioned in §3.2. It makes successful perception inevitable by making experience constitutively dependent on the sensible properties of things: it entails that on perceiving an external item under normal conditions we must perceive one of the response-independent sensible properties it possessed prior to the evolution of sentient creatures (even if that would not seem to make adaptive sense, as in the case of Yuck). Alternatively, if one rejects a response-independent view of sensible properties, one might accept a *response-dependent explanation* of the kind mentioned at the start of §3.1. It explains successful perception by positing a constitutive link in the opposite direction: by making the sensible properties of things constrained by sensory experience. But, as we have seen, the disjunctivist is under pressure to accept both the internal-dependence of sensible quality perception and the response-independence of sensible quality. For the present, I am simply assuming for the sake of argument that he accepts these claims. So these familiar explanations are unavailable to him.

To appreciate the *prima facie* plausibility of the missing explanation claim, consider the following. Given response-independence, prior to the evolution of sensory systems, external items had certain response-independent colors, tastes, smells, and sound-properties. They did not have all possible colors, tastes, smells, and sound-qualities; they only had a very restricted set of such sensible properties. Then sentient creatures came on the scene, including human beings. Given internal-dependence, whether these creatures came to perceive the response-independent sensible properties items had prior to evolution, or came to have illusory experience as of different sensible properties, was dependent on their particular biological make-up. Further, the evolution of normal misperception was

a real possibility. In fact, since the response-independent sensible properties of external items is highly restricted, there are more possible ways of getting it wrong than ways of getting it right. Now the process that led to a creature having a particular biological make-up was "blind" to the true response-independent sensible properties of external items. Instead, it was determined by the unique set of selection pressures operating on the creature's ancestors: their particular habits, dietary needs, predators, and environments. What could make it likely that these factors should conspire to result in *all* creatures (not only *homo sapiens*) normally perceiving the true response-independent sensible properties of *all* external items, which disjunctivists claim is the fortunate situation all creatures find themselves in?

Disjunctivists who accept internal-dependence cannot answer that normal misperception is unlikely to occur in any terrestrial or extraterrestrial species because it is necessarily maladaptive. We have already seen that disjunctivists who accept internal-dependence must admit that normal misperception could be *fully adaptive*. For instance, he must admit that there are possible individuals like Mabel, Yuck, and Soft who normally misperceive the sensible world. So he must admit that it is metaphysically possible that adaptive normal misperception should actually be occurring. For instance, maybe the fruit and foliage possess very similar shades of brown, but we perceive them as red and green. Maybe we are in the same situation with respect to rotten flesh that Yuck is in with respect to the berries: it is (to use Campbell's term) "objectively" sweet, but because it is bad for us, we perceive it otherwise. What explains the fact (as the disjunctivist takes it to be) that such cases of adaptive (or adaptively-neutral) normal misperception *never* (or rarely) actually occur, and that normally successful perception is universal?

The thesis of *pluralism* about sensible properties does not help answer the explanatory challenge. To see this, suppose the disjunctivist adopts pluralism. For instance, against his allegiance to common sense, he says that, prior to the evolution of the taste systems, a foodstuff "objectively" possesses a few closely-resembling determinate tastes: for example, bitter_{17}, bitter_{18}, and bitter_{19}. Now the disjunctivist cannot say that it possesses *every* possible taste quality; that would be even more complicated and contrary to his appeal to common sense. So, given internal-dependence, why should creatures (including humans) evolve to perceive it as having precisely one of these specific determinates of *bitter* as opposed to one of the countless determinate tastes it does not have? Why should their taste systems even get into this ballpark? Indeed, maybe the foodstuff will turn out to be healthy for some creatures. In that case, they likely evolved to perceive it as having taste it does not have.

Of course, sometimes what enhances adaptive fitness might also enhance the capacity to perceive the response-independent sensible properties of

external items. Maybe, by a lucky accident, external items possess the very kind of response-independent sensible properties which it would be advantageous for some creatures to perceive. For instance, maybe prior to the evolution of human beings rotten flesh possessed a disgusting response-independent taste and a putrid response-independent smell. And maybe as it happens selection pressures and mutation events lead to human beings having sensory systems that allow us to perceive this very same taste and this very same smell on coming into contact with rotten flesh, as opposed to other objectionable taste and smell-properties. Maybe, prior to the evolution of human beings, the true response-independent colors of the fruit and the foliage were radically dissimilar, say red and green; and human beings came to evolve visual systems that undergo the kind of internal processing (the "right adjustment") needed to perceive these very same dissimilar colors on viewing the fruit and foliage.

However, to explain the fact (as he takes it to be) that all creatures normally perceive the true response-independent sensible properties of all external items, the disjunctivist who accepts internal-dependence must explain why these cases are not isolated flukes. Why should it be that external items always possess the very kind of response-independent sensible properties which it would be advantageous for creatures to perceive, given their particular biological make-up? Of course, he might just *assert* that in *every* case what enhanced adaptive fitness also enhanced the capacity to perceive the response-independent sensible properties external items had prior to the evolution of sentient creatures, so that there were no (or few) cases of adaptive normal misperception. But this "explanation" is wildly implausible. First of all, it is implausible that in every case exactly what sensible properties we perceive has an adaptationist explanation; surely it also partly determined by the series *fluke mutation events* that occurred (see, e.g., Jacobs and Nathans 2009, 61). Given the response-independence of sensible quality and the internal-dependence of sensible quality perception, why should these mutation events result in sensory systems that in every case allow us to perceive the true response-independent properties possessed by external items prior to their evolution? Second, in any case, to assert that there is such a remarkable coincidence is not to *explain* anything. Barring some kind of pre-established harmony, why should it be that in *every* case what enhanced adaptive fitness also enhanced the capacity to perceive the response-independent sensible properties external items allegedly had prior to the evolution of sentient creatures? Why shouldn't there be countless actual cases of adaptive misperception of the kind described above? (Incidentally, the idea *co-evolution* would be of no help to the disjunctivist here: see Pautz 2006, note 10.) I simply do not see how the disjunctivist who accepts the response-independence of sensible quality and the internal-dependence of sensible quality perception could explain universal perceptual success.

In fact, I would go beyond the missing explanation claim. Given the response-independence of sensible quality and the internal-dependence of sensible quality perception, misperception is *much more likely* than successful perception. To see this, consider a silly analogy. Suppose that we are using a colored diagram that displays all the hues (a representation of color space) as a dart board. Suppose that diagram is marked at red. This might represent that the true response-independent color of some object is red. Now suppose you are blindfolded and throw a dart at the diagram. Evidently, you are much more likely to hit a non-red color than the marked, red one. There is only one way to get it right and many ways to get it wrong. Likewise, given the response-independence of color and the internal-dependence of color perception, illusory color experience is much more likely than successful color experience. The point generalizes to taste, smell and sound.

Yet the argument does not generalize across the board. For instance, even though "primary qualities" like shape and size are response-independent, while our perception of them is arguably partially dependent on internal factors (as the case of Percy and Twin Percy illustrates), there is an obvious adaptationist explanation of successful perception under normal condition; here there is an explanation of why enhancing adaptive fitness and enhancing successful perception always go hand in hand. If creatures' behavior is to be adaptive, then it must be in step with the *rich causal powers* things have thanks to their shapes, sizes, and locations; and the easiest way to achieve this is by making them veridically perceive these features of objects. Here there is no problem for the disjunctivist or anyone else. What I am developing is an argument specifically about "secondary quality" perception. And, again, the argument is only meant to apply against views on which secondary qualities are response-independent but our perception of them is internally-dependent.

3.4. The Missing Explanation Argument

Having defended the claims on which my argument depends, I can finally give the argument:

1. If disjunctivism is true, then we and presumably all (terrestrial and extraterrestrial) sentient creatures normally successfully perceive (roughly) the true *response-independent* sensible properties of all external items, in agreement with common sense. (Part of the disjunctivist's naïve realism which is the motivation behind his view; not a commitment of Lockean response-dependent or "relational" views, nor of Galilean projectivist views.)
2. If this sweeping universal regularity holds in nature, it must have some explanation.

3. If disjunctivism is true, then sensible properties are response-independent but our perception of them is internally-dependent. (By my first and second claims.)
4. If these things are so, then there is no explanation of the sweeping regularity to which disjunctivists are committed. (Missing explanation claim.)
5. Therefore, disjunctivism is false.

Disjunctivists often claim that their view is particularly well-placed to explain our access to the manifest world. This argument shows that, if disjunctivists accept internal-dependence, the opposite is true; indeed, then their position is unbelievable.

Desperate disjunctivists might reject premise 3 by rejecting internal-dependence. Officially, my argument is a dilemma:

> If the disjunctivist *rejects* internal-dependence (perhaps by accepting simple selectionism), then he can adopt the naïve externalist explanation of universal perceptual success, an explanation that makes no room for internal-dependence. But then his view can be ruled out on empirical grounds, for as we have seen the empirical case for internal-dependence is overwhelming. If, on the other hand, he *accepts* internal-dependence (perhaps by accepting sophisticated selectionism), and so allows for the possibility of creatures normally perceiving external items as possessing sensible properties they do not possess because this enhances adaptive fitness, then the ball is in his court to explain why this never (or only rarely) actually takes place, and why all creatures so evolved that on being presented with external items they only ever perceive sensible properties belonging to the restricted set of response-independent properties they had prior to evolution.

The dilemma arises for *anyone* who says sensible properties are response-independent.[37] Dretske, Tye, Byrne, Hilbert and many others take a (reductive) response-independent theory of color. As Byrne and Hilbert admit, response-independent realism about color stands or falls with response-independent realism about other sensible properties. We expect a uniform theory. And response-independent accounts have been developed by O'Callaghan in the case of sound-qualities and Batty in the case of smell-qualities. If they reject internal-dependence (perhaps by accepting a simple tracking version of intentionalism), then they can explain success, but their view is empirically implausible. If they accept internal-dependence, then they face the problem of explaining universal success, among other problems.[38]

3.5. Intentionalist Solutions

Intentionalists, like disjunctivists, oppose views that promote the "interiorization" sensory consciousness: for instance, qualia-based views,

or central-state views on which phenomenal types are necessarily identical with neural types. Consciousness is essentially *externally-directed*. So it is constituted by items outside the head. This is so on intentionalism as well as disjunctivism. On intentionalism, sensory consciousness involves a relation to a content into which external properties enter, properties which (if they are instantiated at all) are not instantiated by the brain. Thus the subjective is permeated by the objective. Further, like disjunctivists who accept "sophisticated selectionism", intentionalists can also accommodate the fact that sensory consciousness is *internally-dependent*. For they can reject pure input-oriented ("tracking") theories of sensory intentionality and accept a theory that accords a role to internal processing and output-oriented factors

But there is a big difference between intentionalists and disjunctivists when it comes to the missing explanation problem. Unlike disjunctivists, intentionalists can accommodate the empirically-demonstrated role of internal factors and at the same time solve the missing explanation problem. This provides a reason to accept intentionalism over disjunctivism. I do not say it constitutes an argument for intentionalism over every alternative. For there are other views that can accommodate the empirically-demonstrated role of internal factors and at the same time solve the missing explanation problem: for instance, views that combine central-state materialism with a response-dependent ("relational") account of the sensible properties. My claim is only that, if our choice is between intentionalism and disjunctivism, the missing explanation problem provides one reason to opt for intentionalism. I will conclude by mentioning two solutions available to intentionalists but not disjunctivists.

The first solution is based on Colin McGinn's *response-dependent primitivism*. Roughly, on this view, the sensible properties are primitive properties. Further, necessarily, an external item x (object, foodstuff, odor-cloud, sound-event) instantiates a primitive non-relational sensible property P (color, taste, smell, sound-quality) iff x is disposed to produce experiences *as of P* in normal individuals under normal circumstances. Evidently, even if internal-dependence obtains, this view clearly makes perceptual success under normal conditions inevitable. Thus, the proponent of this view can adopt what I previously (§3.3) called the *response-dependent explanation* of universal perceptual success under normal conditions. This solution to the missing explanation problem is quite compatible with intentionalism about veridical and non-veridical experience. Indeed, McGinn himself is an intentionalist. But it is incompatible with disjunctivism and naïve realism. That is because, for the three reasons mention in §3.1, a response-dependent view of the sensible properties is unavailable to disjunctivists and naïve realists: they need a response-*independent* view.

However, response-dependent primitivism faces some challenges. Here are two. (i) Suppose a tomato looks *red* to a number of normal perceivers

but clearly *different shades of red*. There actually is such *standard variation* in color vision. On a *liberal version* of response-dependent primitivism, *x* has color *P* iff *x* causes experiences as of *P* in *some* normal individual under *some* normal conditions. This, together with standard variation, entails that the tomato has numerous shades of red. On a *strict version*, *x* has *P* iff *x* causes experiences as of *P* in *all* normal individuals under *all* normal conditions. This entails that the chip has *no determinate shade of red* and may not even have the determinable color *red* (because it looks pink rather than red to normal *pigeons*, say). So, McGinn's view inevitably violates common sense, making it unclear why we should accept it. (ii) McGinn's view requires strange, brute supervenience relations. Suppose overnight a new population comes into existence on Mars, and that their wiring is such that they would perceive a tomato here on Earth as pink were it shown to them. Then this change on Mars *necessarily* results in the tomato here on Earth acquiring a new primitive, non-relational property, *pinkness*: a kind of magical action at a distance. (Further, given McGinn's naïve semantics for color attributions, if a confused human here on Earth said 'the tomato is pink', then he would be right!)[39]

But there is another solution to the missing explanation problem available to intentionalists, one which I favor. It is based on a new version of *Galilean projectivism*. On the traditional 17th century version, sensible qualities are instantiated "in the mind" by sense data or our own experiences. On the neo-Galilean view I favor, sensible qualities exist but are not instantiated by anything at all: they only live in the contents of our experiences (complex properties or propositions). So, for instance, colors exist and *appear* to be pasted on external objects but in fact are not pasted on external objects. Indeed, for reasons I will not go into here, I think that they perhaps should not even be regarded as belonging to the ontological category of *properties*. Since on this view colors exist there is no need to deny obvious facts about colors of the kind examined in connection with Mark Johnston's argument, for instance the fact that blue_{17} resembles purple_{21} more than yellow_{34}. This is a fact about certain uninstantiated qualities. Indeed, it is a fact to which we have access on the basis of visual experience of these qualities (although, as we have seen, on anyone's view it is puzzling how we have such access). In this sense, even on the neo-Galilean view, we have access to the sensible world. Further, by contrast to the traditional Galilean view, the neo-Galilean view that I favor holds that the sensible qualities are not mental; rather, they are mind-independent abstract objects. And truths about their resemblances and phenomenal structure are mind-independent necessary truths, not contingent truths dependent on our biological make-up. Internal-dependence obtains, because which of these mind-independent abstract objects one is related to in a given sensory episode depends on internal biological factors.

The neo-Galilean view comes in different versions. On an *error-theoretic* version, in saying 'the tomato is red' we mean redness is pasted on the

tomato, so this sentence is false. On a more *conciliatory version*, the right semantics is less naïve: 'the tomato is red' is true iff the tomato is disposed to produce experiences of the (uninstantiated) quality, *redness*, in normal humans. So this sentence is true even though the primitive quality, redness, is not pasted on the object. Thus, by advocating a non-naïve semantics, Galilean projectivists can accommodate our common sense judgments as well as realist primitivists like McGinn, but without having to adopt their inflated ontology of the external world. On my view, we should adopt the conciliatory semantics in some cases ('the candy is sweet', 'the shot is painful'); but, in the case of color and sound we are naïve, so the error-theoretic semantics is correct.[40]

On either version of the neo-Galilean view, the missing explanation problem does not arise. On either version, we never successfully perceive the sensible qualities of things, for they have none. In this sense, we do not have access to the sensible world. There is in a sense no such world: the external world is purely quantitative. So the neo-Galilean does not carry the disjunctivist's burden of having to explain how under normal conditions we and other sentient creatures manage to enjoy more or less flawless access that world. Granted, on the conciliatory version of the Galilean view, our *beliefs* about the sensible character of external items, as expressed in language, are normally true. But this is explained by their having non-naïve dispositionalist truth-conditions. Further, since this neo-Galilean view removes sensible qualities from the external world, it avoids McGinn's brute supervenience relations. Of course, this Galilean solution to the missing explanation problem is unavailable to disjunctivists and naïve realists. By contrast, it is obviously available to the intentionalist.

Since the intentionalist can solve the missing explanation problem in one way or another, but the disjunctivist appears utterly unable to do so, the problem provides some support for intentionalism over disjunctivism (and naïve realism more generally).[41]

Notes

1. Campbell (2002) gives broadly epistemological arguments for metaphysical disjunctivism. He says that, if seeing is to ground the capacity for singular thought and the capacity to recognize certain inferences as valid, it must be a primitive mind-world relation, one not analyzable in terms of an experiential common factor and a causal connection to the world (118). Further, he holds that, although this primitive seeing relation is not reductively analyzable in causal terms, it *supervenes on* the "right kind" of causal process from external states to the perceiver (119). (Johnston (2004, 139), although not a disjunctivist in the usual sense, gives a similar account of seeing and its physical basis; and he thinks such an account of seeing is needed to explain how it endows our perceptual beliefs with a special epistemic status.) Here is a quick way of seeing that

Campbell's claim is mistaken. Imagine our eyes become diseased and are replaced by video cameras on our heads, whose input is processed by a supercomputer in Washington DC, which then sends outputs back to our brains. The result is that we have perfectly vivid experiences of the world. However, in this scenario Campbell's primitive seeing relation is presumably absent, since the *right* kind of causal adjustment between world and brain is absent. So, at least on Campbell's view, this would presumably be a mere case of *reliably veridical hallucination*. The world is never "laid bare" to us; instead we merely have inner experiences, which are caused to match the world by way of a deviant causal chain. Yet, contrary to Campbell's claim about the crucial role of his primitive seeing relation, we would still have the capacity to have singular thoughts about particular objects and to recognize as valid the inferences Campbell discusses; and our perceptual beliefs would be just as epistemically virtuous as our actual perceptual beliefs. For additional criticisms of broadly epistemological arguments for disjunctivism, see Pautz (2008) and McLaughlin (2010).

2. See Martin (2006). One might think there is little point in developing epistemic arguments against Martin's negative disjunctivism because it is undermined by well-known counterexamples. But elsewhere (Pautz 2008, section 4) I suggest an unexplored strategy whereby the negative disjunctivist might avoid counterexamples as well as the "screening off" worry, one which appeals to a special, reflexive relation of "phenomenal identity". So I think other arguments are required.
3. See Pap (1959), Jackson (1977), and Lewis (1983). Elsewhere (Pautz 2008, note 59) I criticize recent attempts to provide nominalist analyses of these propositions in terms of counterfactuals with impossible antecedents or peculiar primitive predicates (e.g., 'x and y thereby resemble more than y and z thereby resemble'). But even if these nominalist analyses are true, the epistemic problem arises.
4. See Shoemaker (2003), Chalmers (2006).
5. For this point, and a general discussion of positive disjunctivism, see Pautz (2008), section 7.
6. It might be thought that there is one response-dependent account of resemblance structure that I should not ignore because it is relevant to the issues I will be addressing. I have in mind the account of Byrne and Hilbert. Although in other respects Byrne and Hilbert are staunch supporters of a response-independent account of color, they defend a response-dependent, *perceptual account* of resemblance structure (2003, 15). For instance, consider the fact that purple is more similar to blue than to yellow, a fact Mary can access on the basis of her hallucination. Byrne and Hilbert would say that this amounts to a *perceptual* fact, namely, the fact there is a hue-magnitude, namely *being bluish*, that all blue-appearing objects and purple-appearing objects, but not all yellow-appearing objects, (necessarily) appear to possess. Byrne (2003, 660 and note 38) would provide a similar perceptual account of the fact that purple_{21} is a perceptual mixture of red and blue, another fact Mary can access. (Byrne and Hilbert are clearly giving an account of what it is for colors to actually resemble and to have a unitary-binary character, not merely an account of what it is for them to appear to do so. This was confirmed by Byrne in correspondence; see also his (2003, 660 and note 38).) One might think that the perceptual account is relevant to the issues I will address for a couple of reasons. For one

thing, one might think that the perceptual account makes the epistemology of color structure unproblematic: for instance, Mary has access to color structure because she has access to how things look to her. So one might think that it avoids some of the puzzles I will be developing. For another, one might think that, while other response-dependent accounts of color structure may be incompatible with disjunctivism, Byrne and Hilbert's perceptual account is an account the disjunctivist might well accept. Thus one might think that the disjunctivist can answer Johnston's epistemological argument. But I believe that the perceptual account is certainly unsatisfactory. For instance, Byrne and Hilbert's perceptual account of comparative resemblance in terms of a difference in apparent hue-magnitude is clearly inapplicable when we are dealing with three *shades of blue* whose instances *all* appear to have the *same* hue-magnitude, *bluish*. So it does not provide a general account of the relation *color x resembles color y more than color z*. Further, the perceptual account is open to numerous counterexamples (Pautz 2003). (Byrne and Hilbert (2003, 55) reply to my counterexamples to their account of the unitary-binary distinction by claiming that they were after all not offering an account of ordinary claims of the form 'purple$_{21}$ is *reddish-bluish*', which they surprisingly regard as false because they insist it is only colored *objects* and never *colors* that are reddish or bluish. However, Byrne (2003, 660) *does* give a perceptual account of claims of a very similar form, such as 'purple$_{21}$ is *a perceptual mixture of red and blue*'. My counterexamples can be repeated *mutatis mutandis* against this account.) In any case, even if perceptual account were correct, the epistemological puzzles would remain. So it is not obvious that the perceptual account could help the disjunctivist answer Johnston's argument. For instance, suppose the fact that purple$_{21}$ is a mixture of red and blue amounts to the following general modal/perceptual fact about perceivers: necessarily, all perceivers are such that things that look purple$_{21}$ to them also look reddish and bluish to them. The question still remains: how does Mary know this general modal/perceptual fact about all perceivers on the basis of a single hallucinatory episode? The question is especially difficult for proponents of the perceptual account who accept (as Byrne does) a transparency thesis on which experience only directly affords a subject access to her ostensible environment.

7. For the reductive tracking view, see Tye (2000). For criticisms of the tracking view and a defense of the primitivist view, see Pautz (2007) and (2010). Johnston (2007) has other interesting arguments against reductive accounts of perceptual presence (for criticisms of those arguments, see Pautz (2007, note 33)).
8. Sosa (2002) and Silins (forthcoming) addresses a similar question about scope. But I will not be considering Sosa's *reliabilist* (or safety-based) answers to the scope question (or the other problems I will raise) because I believe that there are independent reasons to reject reliabilism about justification. I will also not consider Silins' Fregean view, because it clearly does not help with specific scope question I am addressing.
9. See Russell (1912), Fumerton (2009), Chalmers (2003), Johnston (2006). Fumerton defends a version of the acquaintance view somewhat more complicated than the one discussed in the text (which helps him with stock objections like the speckled hen). However, these complications will not matter here (but see note 12).

10. A follower of Williamson (2009, 359) might advocate an account somewhat similar to the State-Acquaintance Account. He might say that Mary has a justification for believing that blue_{17} resembles purple_{21} more than yellow_{34} by virtue of knowing that this is so, and that she knows that this is so by simply seeing that it is so, where this seeing might supervene on her brain state. This *Fact-Perceiving Account* differs from the State-Acquaintance Account because perceiving that *p* is a determinate of knowing that *p*, whereas being acquainted with a state is supposed to be a pre-conceptual encounter with the state that is not itself a form of knowledge. However the three problems I will raise for the State-Acquaintance Account apply equally to the Fact-Perceiving Account.
11. For the Benacerraf-Field problem and Field's Error Theory, see Field (1991). For Neo-Fregeanism, see Wright (1983).
12. After writing this, I came across a discussion by Fumerton (2009, 73), which might seem to contain the materials needed to answer this objection. Fumerton seems to be discussing an example in which he undergoes a *borderline* case of pain. Then he has less justification for believing that he is pain than he has in the case of *severe* pain. Fumerton's position is unclear to me, but on one interpretation he would account for this in terms of acquaintance as follows. To begin with, he advocates a degree-of-truth approach to vagueness according to which in such a borderline case the proposition that he is in pain is true to a low degree less than 1. He also holds that he acquainted not just with the experience-state but also the fact that this experience-state makes-true (corresponds with) the proposition that he is in pain *to a low degree*. However, *even if* we allow that degrees of truth and correspondence (truth-making) make sense, this acquaintance-based account of the graded character of immediate justification does not in general work. Suppose, in another scenario, Mary is acquainted with determinate colors C_1, C_2, C_3. Suppose C_1 *just barely* resembles C_2 more than C_3. Nevertheless, it is determinately true, as witness the fact that on being presented with the colors and scrutinizing them all would agree. So, even though the difference in degrees of resemblance is low, the "degree of truth" is 1. A proposition can be determinately true, even if it is unobvious. Now, when Mary believes the non-obvious proposition that C_1 resembles C_2 more than C_3, she has *less* justification for believing this than she has for believing the extremely obvious proposition that blue_{17} resembles purple_{21} more than yellow_{34}. How might Fumerton account for this difference in terms of acquaintance? Since Mary has *some* immediate justification, he must say Mary is acquainted with the state of C_1 resembling C_2 more than C_3, even though this state is unobvious. Could he say that the lower degree of justification is explained by the hypothesis that she is acquainted with the fact that the state of C_1 resembling C_2 more than C_3 makes-true (correspond with) the proposition that C_1 resembles C_2 more than C_3 *to a low degree*? He cannot, because the proposition that C_1 resembles C_2 more than C_3 is (although unobvious) *determinately* true and so true to degree 1; and the state of C_1 resembling C_2 more than C_3 perfectly corresponds with the proposition that C_1 resembles C_2 more than C_3 (makes it true to degree 1). (Even if one is unconvinced by this example, one must recognize that there is a problem here, for there are other cases of low immediate justification with high degree of truth and correspondence.) So, while Fumerton's new approach is an advance in that it invokes graded notions, I think it needs to be clarified

and that more needs to be said about how it explains all differences in degrees of immediate justification.

13. Unlike the widely rejected thesis of revelation (we know *all* the essential properties of sensible qualities), the indefeasibility intuition (we have indefeasible justification for believing *some* things about sensible qualities) does not rule out reductive physicalism about the sensible qualities and require "primitivism" instead (*pace* Byrne 2003, 648). There is no obvious reason why we could not have indefeasible justification for believing some things about complex physical properties (perhaps by being acquainted with them).
14. See Russell 1912 and Price 1932, 3.
15. For apparent endorsements of the possibility of acquaintance-based indefeasible justification, see Fumerton (2009, 72–3) and (Chalmers (2003, 252). There is some textual evidence that Chalmers would respond to my cases of *acquaintance without certainty* by saying that acquaintance (with the right cognitive background) only *sometimes* entails 'certainty'. But if we take this view we face a difficult question: what is the additional epistemic factor that explains why acquaintance (with the right cognitive background) entails certainty *in some cases but not others?* Of course, another reply is that the indefeasibility intuition is mistaken. For instance, while Fumerton and Chalmers might accept it, Conee (2005) and Williamson (2005) clearly would reject it, given what they say about the knowledge-destroying power of testimony. Another possible view is that the issue is somehow indeterminate. After all, the issue of whether Mary's degree of propositional justification can go down even while she retains her vivid experience of blue_{17} resembling purple_{21} more than yellow_{34} is an issue about whether her degrees of belief *should* go down, which in turn might be glossed in terms of what bets she *should* take, etc. It is natural to think that such normative issues can be indeterminate.
16. It is part of dogmatism as I here understand it that experience yields justification even in the absence of an independent justification for thinking defeaters do not obtain. Many defend perceptual dogmatism. Pryor (2000) provides a particularly forceful defense. But the difficulties I will raise for the attempt to use it to explain the justification of second-order beliefs have not been addressed. I should mention that the proponent of the Perceptual Dogmatist Account of such justification might add that we can sensorily entertain resemblance-propositions in imagination after being presented with colors successively; this might help him answer a problem due to Byrne (2003, 654).
17. Here I do not mean to suggest that a proponent of Johnston-style property-complex intentionalism about all experience cannot accept perceptual dogmatism about the justification of *first-order* beliefs. For instance, he might say that the following is a basic epistemic principle (akin to the proposition-based principle defended by Pryor (2000)): necessarily, if one is aware of ("sensorily represents") a complex property *C* (as it might be, *being an x and a y such that x is an extended* $\textit{blue}_{17}$*, round object, y is an extended* $\textit{purple}_{21}$*, elliptical object, and y is next to x*), one has immediate *prima facie* justification for believing that some objects instantiate *C*. Indeed, property-complex intentionalism is compatible with just about every theory of perceptual justification: old-fashioned abductivism, a Williamson-like view according to which in the successful case one has more evidence (which is in fact more similar to Johnston's actual view), and so on.

Pace Kriegel (this volume), it is not open to any convincing epistemic objections. (I mention in passing that *one* physicalist version of Kriegel's own, somewhat underspecified "adverbialism"—a type-type identity version—*is* open to such objections; see Pautz 2008, section 4.) I only say that a proponent of property-complex intentionalism cannot accept the Perceptual Dogmatist Account of the justification of *second-order beliefs*. For that account requires that we sensorily entertain *propositions* about colors; and while this is compatible with proposition-based intentionalism it is apparently incompatible with property-complex intentionalism.

18. For the point that disjunctivism (or naïve realism) is not clearly in tension with the mere claim that experiences have contents (a claim that might be somewhat trivial), and is only clearly in tension with the claim that the *fundamental* nature of experience is to be characterized in terms of a relation to a content, see Pautz (2008), especially note 19. Brewer (forthcoming, chapter 4) has recently endorsed this point, in connection with an argument for the claim that experiences have content due to Susanna Schellenberg.
19. It is worth pointing out that the disjunctivist could also accept dogmatism about perceptual justification, and *deny* the typical disjunctivist claim that our perceptual beliefs in the good case enjoy greater justification than in the bad case. He might say that our perceptual beliefs have the same degree of justification in both cases, because in both cases things seem the same way. So disjunctivism about phenomenology is quite consistent with a "common factor" view about perceptual justification. This is worth pointing out because to many the claim that our perceptual beliefs have the same degree of justification in both cases is more plausible than the claim that they enjoy greater justification in the good case than in the bad case. For instance, I would point out that the claim that that our perceptual beliefs enjoy greater justification in the good case than in the bad case has the implausible consequence that cases of this sort are possible: you seamlessly transition from hallucinating a tomato to seeing one; at the transition point, you *happen* to increase the degree to which you believe that a round thing is present, in each case basing your belief on your experience; yet this is epistemically OK, thanks to the fact that at the transition point you enter a good case.
20. See White (2006).
21. Of course, in reply, the dogmatist might just reject the indefeasibility intuition (see note 15). A more concessive reply would be to accept it and try to accommodate it. For instance, the dogmatist might say that when it visually seems to Mary that blue_{17} resembles purple_{21} more than yellow_{34} (when she "sensorily entertains" this), she has indefeasible introspective justification for believing that this psychological condition obtains (she has perfect access to the evidence); and she also indefeasible *a priori* justification for believing that that perceptual error in *this* case is impossible (that the psychological evidence *a priori* entails the truth of the proposition), even if it typically is possible. But this is implausible, and in any case just brings in more claims about indefeasible justification that would apparently require explanation.
22. Elsewhere (Pautz 2007, note 34) I explain how a modified version of Lewis-style *interpretationism* about intentionality (e.g., Lewis 1983) might help with the modal version of the scope problem: it might explain why *some* experiences

(metaphysically) necessitate (in believers) an *inclination to believe* (or maybe even outright belief in) *some* things but not *others* about the external world and about those very experiences. The idea is that, just as Lewis holds that there is a constraint on interpretation concerning "degrees of naturalness", there is another constraint on interpretation concerning "degrees of obviousness".

23. To see why the Bayesian problem applies equally against intellectual dogmatism, consider the following example. Suppose a person has an intuition that some proposition p of Euclidean geometry is true (indeed, necessarily true). (In fact, unknown to this person, p is a contingently false proposition, since we live in a non-Euclidean world.) *Very roughly*, the Bayesian objection to intellectual dogmatism is that under dogmatism, on having this intuition, the person's credence in the skeptical hypothesis *that he is having the intuition but it is false* should go down, but by Bayesian principles it should go up. The problem can even arise where p is a non-logical necessary truth. (The argument only fails where p is a logical truth, since the usual axioms of probability theory require that all logical truths are assigned probability 1.)
24. See Pryor (2005, 192) and Pryor (2000, n. 37).
25. Johnston (2004) advances a similar non-epistemological argument involving *reference to properties.* But the argument I have in mind differs from Johnston's argument (cf. Pautz 2008**,** note 23).
26. See Kalderon (2007). However, Kalderon does not provide a clear argument for accepting response-independent pluralism over alternative views, as he himself admits (2007, 583); and pluralism is open to serious objections (Pautz 2007).
27. For the argument from revelation against response-independent reductionism, see Campbell (1993). For the argument from structure, see Pautz (2010, sect. 3).
28. For the point that resemblances among tastes and smells are very poorly correlated with resemblances among the corresponding chemical properties of foods and odors, see Goldstein (2007, 331) and Wolfe (2009, 340–341). For the point that they are much better correlated with internal neural patterns, see Howard *et al.* (2009) and Goldstein (2007, 332–340).
29. For a discussion of some of these experiments, see Zwislocki (2009, 71–4).
30. Despite his externalism, even Noë (2004, 147) accepts internal-dependence in color vision, saying that "facts about our sensory systems determine what kinds of experiences we can have". Internal-dependence is in fact quite compatible with his active externalism, since by stipulation the individuals in coincidental variation cases differ in their output-oriented sensorimotor capacities and (presumably) in the "sensorimotor beliefs" that Noë thinks constitute phenomenology (2004, 119). Dretske (1995) and Tye (2000) develop a more input-driven, tracking intentionalism. For the argument that *this* form of externalism must be rejected because it is in conflict with internal-dependence, as well as other arguments against it, see Pautz (2007) and (2010).
31. I have just argued that if the disjunctivist (or indeed the intentionalist or anyone else) accepts internal-dependence, he should accept the possibility of normal misperception. My argument is that, in *some* coincidental variation cases, the individuals involved will ostensibly perceive *different* sensible properties from the *same* quality-space, which are incompatible with one another. One response (suggested to me by David Hilbert and Mark Kalderon) is that it is *metaphysically necessary* that, in *every* coincidental variation case, even if the

individuals involved have broadly similar sensory systems, they have experiences of different *compatible* sensible properties from *different* quality-spaces (e.g., human sound-qualities and alien sound-qualities), where the items in their environment actually possess those sensible properties. But such a strange, brute modal claim cannot be supported by intuition (intuitively, such individuals *could* ostensibly perceive different *incompatible* sensible properties from the *same* quality-space). Nor does it follow from any philosophical theory of perception. What could possibly explain this alleged metaphysical necessity? (No simple form of "selectionism" could support this modal claim, since in coincidental variation cases the individuals' cortical states track the *same* response-independent properties.)

32. See Hawthorne and Kovakovich (2006, 180–181) and Block (2009). I think that both the simple selectionist theory and the sophisticated selectionist theory I will develop below on behalf of disjunctivists could be used to handle the cases that these philosophers claim to be problems for disjunctivism.
33. See Johnston (2004).
34. See Putnam (1981).
35. This argument involving coincidental variation cases against simple selectionism and other such radically externalist views of phenomenology derives from Pautz (2003). (Shoemaker (2003, 269) briefly mentions a similar argument but the single case he describes is very underspecified and he does not support the argument with empirical considerations.) For discussion, see Cohen (2009, 81ff). Mark Johnston raises a "selection problem" involving an actual case (viewing the ocean from different places) but elsewhere (Pautz 2007, section 4 and note 7) I suggest that the proponent of simple selectionism might be able to handle such *actual* cases; it is *hypothetical* cases of coincidental variation that he cannot handle. (However, there is an interesting actual case of extreme variation in which fifty percent of the human population do not smell the compound *androstenone* at all, twenty-five percent perceive smell it as "sweet musky-floral", and the remaining twenty-five percent smell it as "urinous" (Wolfe 2009, 340). This case has not been discussed by philosophers but I think it does pose a serious problem for simple selectionism about smell perception, and for "objectivist" accounts of smell qualities (Batty 2009) more generally.) Kalderon (forthcoming) addresses the problem posed for "selectionism" by hypothetical coincidental variation cases like the ones I have described. He responds by saying that they are not a problem if the selectionist adopts a "relational view" of experience (naïve realism). But I do not understand this; indeed, I have assumed that the selectionist accepts naïve realism. I think a better response available to the selectionist would be to adopt the "sophisticated" selectionism that I describe below. Of course, the proponent of simple selectionism also might respond to coincidental variation cases by simply rejecting internal-dependence. For instance, the disjunctivist Bill Fish suggested (in discussion) that in these cases the individuals only differ in their *desires*, not in their *experiences*. But this kind of response fails for reasons I describe elsewhere (Pautz 2010, note 16).
36. This case resembles one McGinn (1989) uses for a different purpose.
37. Elsewhere (Pautz 2006) I have developed an argument against response-independent views slightly different from the missing explanation argument. The

idea was that a view that combines the response-independence of sensible quality and the internal-dependence of sensible quality perception entails that we cannot be said to *know* the sensible properties of external items, in view of externalist, anti-luck requirements on knowledge. (For how this differs from an argument briefly mentioned by Chalmers (2006), see Pautz (2006, note 12).) I now think that the "missing explanation" argument in the text, which does not directly involve epistemic concepts like knowledge, is superior. For one thing, it does not rely on controversial intuitions about the connection between knowledge and luck. It is more metaphysical in character, for it concerns the explanation of an alleged regularity, namely universal perceptual success under normal conditions (compare the Benacerraf-Field argument against mathematical Platonism). The "metaphysical" character of the argument is relevant to a potential reply. The reply has it that even the disjunctivist who accepts internal-dependence has (or could have) a *justification* for believing that we generally perceive the true sensible properties of external items; on a dogmatist view, the justification might come from bootstrapping (White 2006, section 7), while on a conservative view, the justification might be a form of "default entitlement" (White 2006, section 9). This reply misses the point, because the missing explanation argument is not about *justifying* belief in the regularity but about *explaining* the regularity. If the disjunctivist rejects internal-dependence, his view is empirically inadequate. If he accepts it, he must admit that there is no explanation for the regularity he alleges. Of course, he could then take it to be a giant fluke, but it is more reasonable to accept an alternative view (such as one of the intentionalist views in §3.5) that accommodates internal-dependence while avoiding giant flukes. (Here I am indebted to discussion with Nico Silins and Geoff Lee.)

38. For the point that response-independent realism about colors stands or falls with response-independent realism about other sensible properties, see Byrne and Hilbert (2003, 59). See O'Callaghan (2007) and Batty (2009) for interesting attempts to generalize this view to sound-qualities and smell-qualities, respectively. In fact, these philosophers accept response-independent *reductionism*, reducing sensible properties to response-independent physical properties of external items. While I previously (§3.1) said that some disjunctivists accept response-independent *primitivism,* they could also opt for response-independent reductionism. However, I think this view can definitely be ruled out. It faces not only the missing explanation dilemma, but a number of other problems besides (Pautz 2010, sections 3–4, and notes 17 and 23). In response to my missing explanation dilemma, the response-independent reductionist David Hilbert suggested (in discussion) that one might accept internal-dependence (my second horn) but claim that our perceptual success is explained by the perceptual success of our primitive ancestors. This response might also be adopted by the disjunctivist. But this just passes the buck: what explains the perceptual success of *our ancestors?* (Analogy: one cannot adequately answer the Benacerraf-Field problem for mathematical Platonism by simply asserting that our ancestors were reliable about the Platonic realm.) Of course, to answer this question, the disjunctivist might invoke the naïve externalist explanation; but this would require rejecting internal-dependence, and so can be ruled out on empirical grounds (my first horn).

39. See McGinn (1996). I think McGinn could not solve the problem about Martians by adopting "relativism" (see Pautz 2006, note 16). In the case of *smell* and *taste* properties, Shoemaker's answer to the missing explanation problem would resemble McGinn's *response-dependent explanation*, except that Shoemaker *reduces* such properties with sensory dispositions, whereas McGinn accepts supervenience without reduction. But, by contrast to McGinn, Shoemaker (e.g., 2003) holds that *colors* are response-independent. He also denies internal-dependence *as I have formulated it*: he denies that what *colors* we perceive is internally-dependent, holding instead that it is externally-determined. So in the case of color vision he would accept the *naïve externalist explanation* of perceptual success. Yet he still accepts something in the vicinity of internal-dependence, for he holds that phenomenology is determined, not by what *colors* we perceive, but by what "appearance properties" or "qualitative characters" we perceive, where this is internally-dependent. (Chalmers' (2006) view is somewhat similar.) But, in my opinion, Shoemaker's complex view is problematic. See Cohen (2009, 81); Tye (2000, chapter 5); and Pautz (2010, section 5).
40. For more on this form of conciliatory eliminativism, and why it might have some advantages over the version defended by Chalmers (2006), see Pautz (2006**,** note 18). Mark Johnston (2007, 265) briefly describes an intriguing view which, on one interpretation, is similar to the kind of conciliatory eliminativism I have in mind. The similarities (for instance, both views maintain sensible qualities may not be properties at all, but for different reasons) are discussed in Pautz (2007, note 22).
41. Earlier versions of this paper were presented in 2010 at the New Directions in Mind Workshop at Columbia and the Workshop on Color Perception and Color Language at UNAM. For extremely helpful comments I would like to thank Yuval Avnur, Sinan Dogramaci, Chris Frey, Benj Hellie, David Hilbert, Mark Kalderon, Geoff Lee, John Morrison, Ian Phillips, Susanna Siegel, Nico Silins, Pär Sundström.

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