

Hallucination as Perceptual Synecdoche

(forthcoming at the *Australasian Journal of Philosophy*; please cite final version)

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Relationalism is the view that perception is partly constituted by external objects (McDowell 1994; Campbell 2002; Martin 2004). Faced with the hallucination argument, and unsatisfied with the standard disjunctivist reply, some ‘new wave’ relationalists explain away the possibility of hallucinations as mere illusions (Alston 1999; Watzl 2010; Ali 2018; Masrour 2020). In this paper, I argue that some of these illusions (as in Chalmers 2005; Ali 2018) are perceptions of internal objects which appear as external ones. Then, in response to the obvious screening-off objection, I argue for a novel reply called ‘intramerism’: roughly, external objects are ordinarily perceived because they gain internal parts—they ‘grow into the head’. The preceding hallucinations are thus ultimately explained away as a kind of perceptual synecdoche, in which internal parts appear as their (ordinarily perceived) external wholes. The paper concludes by addressing some objections.

Keywords: relationalism, new wave, illusionism, hallucination argument, overdetermination, screening-off, mereology, parts

1 Illusionism, Screened-Off

1.1 Relationalism and the Hallucination Argument

A popular view of perception is:

Relationalism Necessarily, any perception of an F is (partly) constituted by that F.

When I see (or visually perceive) a muffin, for instance, relationalism says that the muffin itself is a literal constituent of my experience.¹ It is *not* that I am acquainted with a muffin sense-datum, or that I token an inner representation whose content is satisfied by a muffin, or any such thing. Relationalists hope to afford us with an explanation of the phenomenal character and unique epistemic role of perception. But there is a familiar challenge to the view (on relationalism, see McDowell 1994; Campbell 2002; Martin 2004).

Say that a hallucination of an F is *perfect* just when it has the same (type of) antecedent neural states as, and is (phenomenally) indistinguishable from, a corresponding perception of an F (cf. Robinson 1994).² For example, if the pattern of retinal stimulation which occurs when I perceive a muffin

¹ As I am using the term, relationalism is entailed by both naïve and direct realism (Genone 2016; Steenhagen 2019), which make more substantive claims about the constitution relation, the grounding of phenomenal character, etc. (this usage follows that in Masrour 2020, Beck 2021, etc.). Thanks to an anonymous referee for pointing out this ambiguity.

² The labels ‘perfect’ and ‘causally-matching’ are often used interchangeably (e.g., Raleigh 2014; Ali 2018), but not always (cf. Martin 2004). My usage most closely resembles Raleigh’s.

could be exactly replicated in the muffin's absence—say, by a sophisticated machine—and the resulting experience looked to me just like it would in the case of perception, then that experience would likely be a perfect hallucination of a muffin. The challenge is then:

Hallucination Argument

- (1) Possibly, there is a perfect hallucination of an F.
 - (2) Necessarily, a perception and perfect hallucination of an F are indistinguishable only if the former is constituted by an F just when the latter is too.
 - (3) Necessarily, no perfect hallucination of an F is constituted by an F.
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- (4) So, possibly, some perception of an F is not constituted by that F.

The hallucination argument is valid. For (2) and (3) entail that, necessarily, any perception and perfect hallucination of an F are indistinguishable only if the former is *not* constituted by an F. By premise (1), however, there is possibly a perfect hallucination and (thus) corresponding perception which are so indistinguishable. (4)—the negation of relationalism—immediately follows. Relationalists must therefore reject at least one of premises (1)-(3) (on the hallucination argument, see Soteriou 2016; Crane and French 2021).

1.2 Illusionism and Internal Illusions

The traditional form of relationalism is *disjunctivism*, on which perfect hallucinations differ constitutively from perceptions (Martin 2004; Brewer 2011; Soteriou 2016). Disjunctivists, then, tend to deny premise (2).³ At the same time, disjunctivists face objections—chiefly, that the phenomenal character of an experience is no longer a reliable guide to how it is constituted—and thus they undermine an important motivation for relationalism itself. In response, some *new wave* relationalists have opted to deny either (1), (3), or both (cf. Alston 1999; Noë 2007; Watzl 2010; Raleigh 2014; Ali 2018; Barkasi 2020; Masrour 2020). This paper concerns a common new wave strategy, *illusionism*, which we can understand as deploying the following schema:

Illusion Schema Possibly, there is an illusion of an F.

An *illusion* of an F is a perception of a non-F in which that non-F appears *as* an F—for instance, a straight stick submerged in water might be perceived as a bent one (see Soteriou 2014; Ali 2018). New wave illusionists who reject premise (1) deploy the illusion schema as a *replacement* for that premise: what *seems* to be a perfect hallucination of an F is *in fact* merely an illusion of one (cf. Alston 1999; Noë 2007; Masrour 2020). New wave illusionists who reject premise (3), in contrast, deploy the illusion schema as a *counterexample*: some possible perfect hallucination of an F *is* constituted by an F, *because* it is a (kind of) illusion of an F (cf. Raleigh 2014; Ali 2018; Barkasi 2020). As a simplification, I will merely say that new wave illusionists deploy the illusion schema

³ I say 'tend' because I do not insist that all disjunctivists *must* be understood as denying premise 2 (Fish 2009, for instance, denies premise 1). More generally, I intend to use the hallucination argument merely as a loose framing device for various forms of relationalism, rather than as a strict taxonomy of those forms. Thanks to two anonymous referees for raising these concerns.

to *explain away* the relevant perfect hallucinations as illusions, whether as a replacement or a counterexample.

In any case, it is important to note that the scope of illusionism is restricted. The point is just that *some* possible perfect hallucinations can be explained away as illusions. In the case of the retinal stimulator, for example, a new wave illusionist might claim that I am in fact *perceiving* the machine itself *as* a muffin—hence, I am having a radical kind of muffin illusion (cf. Chalmers 2005; Gallagher and Zahavi 2012; Raleigh 2014). In that case, either premise (1) or (3) of the hallucination argument is false of *this* possible perfect hallucination, in a manner compatible with non-disjunctive relationalism *and* the intuition that there is at least something ‘hallucination-like’ going on in the vicinity—namely, an illusion. Other instances of F, of course, might require other explanations (see esp. Masrour 2020). For all that, however, another challenge looms.

Let us say that a hallucination of an F is *defiant* just when it is perfect, and no external non-F (or F) is a plausible object of experience.⁴ An object is *external*, roughly, when it exists outside the boundaries of the experiencer’s skin and skull—muffins count, neurons do not. Should I manage to perfectly hallucinate a muffin in a blank white room, for example, then my hallucination would plausibly be defiant. After all, there seems to be nothing in the room (and outside of my body) which could plausibly serve as the object of my experience. If there is evidence for the possibility of defiant hallucinations like these, and no new wave strategies other than illusionism seem applicable, then new wavers face pressure to explain away such hallucinations as internal illusions. An *internal* illusion of an F is an illusion of an F, in which the perceived non-F is internal (that is, not external). Back in the blank white room, for instance, the new waver is pressured to say that I perceive an internal object—say, a cluster of activated photoreceptors on my retina—*as* a muffin.

In fact, there *is* evidence for the possibility of defiant hallucinations. As a paradigm example, consider a Boltzmann brain: a nervous system, exactly homologous to my own when I (say) perceive a muffin, which by some quantum fluke emerges into the otherwise empty vacuum of space (for other ‘chaotic’ hallucinations, see Chalmers 2005; Papineau 2014; Barkasi 2020). By its homology with my own brain, there is a strong temptation to regard the Boltzmann brain as undergoing a hallucination indistinguishable from, and possessed of the same neural antecedents as, my perception of a muffin. Indeed, Boltzmann brains (more generally) are often discussed as a sceptical threat to the standard model of Big Bang cosmology (Carroll 2020), in which their presupposed hallucinations are indistinguishable from the (much more complex) experiences of an arbitrary scientific observer. Taken together, the possibility of a Boltzmann brain favours that of a perfect hallucination. *Unlike* the retinal stimulator case, however, there is no obvious external object available for an illusionist explanation—there is only empty space. Thus, the perfect hallucination also seems defiant.

At the same time, no explanation *other* than illusionism seems good enough for defiant hallucinations. Of course, I cannot address every explanation the new waver might cook up. But some of the most popular options are not applicable. For instance, new wavers have claimed that some perfect hallucinations are in fact *merely* conceivable, or *at most* possible in some sense

⁴ What makes an object of experience *plausible*? This is a difficult question, which will be implicitly (albeit incompletely) addressed below. At the very least, however, a plausible object should exist (perhaps concretely, though cf. Johnston 2004), it should have some non-trivial (e.g., causal) relation to the perceiver, it should bear at least some structural similarities to the hallucinated object (e.g., its shape should be transformable to that of the hallucinated object), and so on. Thanks to an anonymous referee for pressing this point.

irrelevant to relationalism (Noë 2007; Masrour 2020). Yet the Boltzmann brain seems compatible with the relevant physical laws, and thus *nomologically* possible without any appeal to conceivability. New wavers might also reject such cases as imperfect—most plausibly, as being distinguishable from corresponding perception. But even this seems like a huge gamble. Obviously, we cannot directly experience the phenomenology of the Boltzmann brain, and its homology with my brain provides one positive reason for regarding that phenomenology as indistinguishable from my own (given the ‘same-cause, same-effect’ principle discussed in Robinson 1994; Foster 2004; Nudds 2009).

The preceding suggests, at least, that new wavers should also be illusionists about defiant hallucinations. But this does not by itself force a commitment to *internal* illusions. Several authors discuss the possibility of explaining away defiant hallucinations as illusory perceptions of, for instance, *past objects* (Weir 2004; MacGregor 2015; Manzotti 2019), *abstract objects* (Johnston 2004), *absences* (Alston 1999; Watzl 2010; Phillips 2013; Ali 2018), or some other unusual external object.⁵ While there is not room here to discuss these alternatives in any serious depth, I consider them far more exotic than the appeal to internal illusions. First, internal objects comprising the antecedent states of a defiant hallucination will, by definition, *always* be available as candidate objects of perception. Furthermore, most *already* accept interoception, which strongly resembles the perception of internal objects (like muscle spasms, hunger pangs, etc.). In contrast, the very existence of past objects, abstracta, absences, and the like, is a matter of philosophical controversy. And even setting this aside, it is far less obvious whether such *recherche* objects will always be available for perception (or, if available, whether they will be suitable for constituting an experience). Taken together with the apparent possibility of defiant hallucinations and the inapplicability of non-illusionist strategies, the preceding concerns pressure new wavers to explain away such hallucinations as internal illusions.

But what, exactly, are the objects of these internal illusions? Setting aside the indeterminacy present when individuating *any* perceptual object, part of the answer will depend on the details of the experience (for example, an experience of a muffin versus an experience of a cupcake). Another part will depend on the details of illusionism, and which internal non-F is most plausibly perceived in the case of defiant hallucinations (for example, a photoreceptor cluster rather than the visual cortex). Still another part will depend on more general empirical facts (for example, which internal objects have which properties). And so on. Ultimately, then, the question cannot be generally answered; it depends on a careful balance of details specific to each case. That said, I will continue to assume here that the photoreceptor cluster is a plausible internal non-F for the case of a muffin hallucination, and that this example is fairly representative of internal illusions more generally.⁶

⁵ Thanks to an anonymous referee for pointing out these alternatives.

⁶ See Beck 2021 for a critical discussion of hallucinations caused by spontaneous photoreceptor activity. Depending on the exact boundary of a nervous system, Boltzmann brains might not duplicate photoreceptor clusters; in such a case, a more explicitly neural object should replace the cluster as the non-F in question.

1.3 The Screening-Off Argument

For all that, the relationalist will probably remain sceptical of internal illusions.⁷ After all, relationalism is typically understood in externalist terms: the F which constitutes a perception of an F is external to the perceiver. Otherwise, we risk losing precisely that direct, constitutive access to the external world which made relationalism attractive in the first place. This risk can be captured, in at least one way, by a final challenge:

Screening-Off Argument

(5) Necessarily, if an internal non-F is perceived as an F, then it would be so perceived even when an F is too.

(6) Necessarily, no internal non-F is perceived as an F when an F is too.

(7) So, necessarily, no internal non-F is perceived as an F.

The screening-off argument is valid (for similar arguments, see Robinson 1994; Johnston 2004; Martin 2004). It is also tacitly restricted to those choices of F, like the muffin experience of a Boltzmann brain, which on pain of the hallucination argument pressure new wavers toward internal illusions. As such, its conclusion suggests that this pressure cannot be born: such internal illusions are, in fact, impossible.

Toward premise (5), suppose that an internal non-F—say, a cluster of photoreceptors attached to the Boltzmann brain—is perceived as an F—say, as a muffin. By construction, that same (type of) cluster, undergoing the same (type of) activity, will be attached to *my* brain when *I* perceive a muffin. In that case, however, it seems as if I must *also* perceive the cluster (attached to my brain) as a muffin. For how could it be that the object gets perceived as a muffin in one case, yet not in another *exactly like it* but for the presence of an external muffin? The only available answer, it seems, is that the presence of the external muffin somehow *inhibits* the perception of the cluster. The puzzle is how this could happen, given that whatever difference the muffin makes, it does not ‘show up’ as a neural difference.⁸ Were it to do so, after all, then it would (by construction) show

⁷ The point is mostly anecdotal, though corroborated by the literature. Beck 2021, for instance, claims that a similar move ‘doesn’t appear to be terribly popular’ (2021: 405). However, see Alston 1999 and Watzl 2010 for an endorsement of internal illusions (albeit not so named), and Raleigh 2014 and Ali 2018 for sympathetic remarks.

⁸ Ali 2018 (following Watzl 2010) suggests that ever-present internal objects, like phosphenes, could be ignored in the presence of external stimuli and illusorily perceived as external objects in the absence of that stimuli, thus explaining away *imperfect* hallucinations. But this sort of selective attention is hard to extend to the case of *perfect* (hence, defiant) hallucinations, given that attention seems dependent on events in the brain. In other words, the Boltzmann brain cannot ‘choose’ to perceive phosphenes *unless* my brain does the same thing—and since my brain ignores the phosphenes, the Boltzmann brain does too. Ivanov 2021 defends a related ‘Dual Process View’, which might avoid the preceding objection. According to Ivanov, perfect hallucinations can be explained by the obtaining of abnormal external conditions, which force a change in ‘extended cognitive processes’ even though ‘nothing internal to the perceiver would need to be going wrong’ (2021: 2). Whether this is possible, however, turns on subtle questions about the individuation

up also in the Boltzmann brain, and thus the cluster would not be perceived *there* either—contrary to the hopes of the internal illusionist. Premise (6), in turn, is justified by the idea that the kind of ‘double perception’ in the consequent of premise (5) is unacceptable. Specifically, it reeks of problematic (metaphysical and explanatory) overdetermination: the phenomenal character of my muffin experience now seems entirely accounted for by the illusory appearance of photoreceptors attached to my brain, without any need of external muffins.

Barring a radical kind of externalism, on which perception of an internal object is suppressed *merely* when an external one is present (that is, without any corresponding neural changes), premise (5) is difficult to reject. In the remainder of this paper, however, I would like to defend an overlooked *mereological* response to premise (6).⁹ For reasons which will become clear, I call this response *intramerism*.

2 Toward Intramerism

2.1 Intramerism and the Indirectness Argument

Very roughly put, intramerism is the view that external objects get perceived by growing into the head. More specifically:

Intramerism Necessarily, if an F is perceived as an F, then this is (partly) because an internal non-F part of that F is so perceived.

In intramerism, ‘part’ has its mereological sense—as when a blueberry is part of a muffin but not part of the berry family—and ‘because’ has its constitutive or ground-theoretic sense—as when a muffin is solid because of its atomic structure but not because it was sufficiently baked. Of course, the internal non-F in question is precisely that to which the illusionist appeals in response to defiant hallucinations. Intramerism therefore implies that, among other things, a muffin is perceived as a muffin because the photoreceptor cluster which is part of that muffin is also perceived as a muffin. I do not claim, however, that muffins *always* have photoreceptor parts. Instead, I claim only that muffins have photoreceptor parts *when* they are perceived, and that they are perceived *because* they have such parts (*mutatis mutandis* for other Fs and internal non-Fs). Hence, the claim that external objects get perceived by ‘growing into the head’.

The sense in which intramerism is a *response* to premise (6) of the screening-off argument is that it entails the negation of that premise *without* any ensuing overdetermination. To see this, suppose that intramerism is true. All parties to the current dispute will grant that, possibly, an F is perceived as an F. Intramerism therefore entails that, possibly, an F is perceived as an F because an internal non-F part of that F is so perceived. Since the constitutive ‘because’ is factive—‘P because Q’ entails ‘P and Q’—it also follows that possibly, an internal non-F is perceived as an F even when an F is too. And this negates premise (6). More concretely, intramerism entails a form of double perception in which (for example) a muffin is perceived *because* one of its parts is too. It is simply that the latter part is, perhaps surprisingly, an internal one.

of cognitive processes—questions which my view seems to avoid. Thanks to an anonymous referee for pointing out this connection.

⁹ Another, non-mereological response to premise 6 can be found in Sethi 2020.

Does this resulting double perception still risk overdetermination? By the details of intrameralism, it does not seem to. It is already a familiar idea that an object is perceived because some part of it—most naturally, its surface—is similarly perceived. For example, it is natural to hold that a muffin is perceived as a muffin in virtue of the fact that its outer crust is so perceived. If this *is* a kind of overdetermination, then it is one to which many are already committed, and it is no different from the *unproblematic* sort which is common to constitution: for instance, the sort in play when a table is red because of the redness of its parts. Granting this, however, it is hard to see why *problematic* overdetermination would arise simply when the relevant part of the object changes from external (the muffin’s outer crust) to internal (the photoreceptor cluster). That movement is certainly controversial, and it needs defending. The point is just that *if* it can be defended, then the resulting double perception needn’t be as worrisome as the screening-off argument presupposes. It is just another case of overdetermination by constitution.

We can finesse this point into an argument for intrameralism:

Indirectness Argument

- (8) Necessarily, if an F is perceived as an F, then this is because the most accessible part of that F is so perceived.
- (9) Necessarily, the most accessible part of a perceived F is an internal non-F.

- (10) Therefore, necessarily, if an F is perceived as an F, then this is because an internal non-F part of that F is so perceived.

The *most accessible part* of an F is simply that part of it most directly causally responsible for perception, regardless of whether or not that part is the F’s surface. In any case, the indirectness argument is clearly valid. Its premises also encode the point about overdetermination. Premise (8), after all, does not seem to incur any problematic overdetermination when the most accessible part of an F is its surface, as discussed above. Merely shifting that part into the head, via premise (9), should not change anything. As such, (10) will follow without incurring any problematic overdetermination along the way. Since (10) just is intrameralism, a defence of premises (8) and (9) should suffice as a response to premise (6) of the screening-off argument (or so, at any rate, I will assume).

2.2 Surface-Style Perception

Let us start with premise (8). Let us also suppose, for a kind of hypothetical proof, that an arbitrary F is perceived as an F: say, the muffin as a muffin. Does it follow that the muffin is so perceived because the most accessible part of it is too? At the very least, it trivially follows that the muffin *is* perceived. And many philosophers already accept the view that one perceives an F in virtue of perceiving its most accessible part (Clarke 1965; Jackson 1977; Armstrong 1979; Neta 2007; Sorensen 2008).¹⁰ While some have contested this view (Stroll 1986; McNeill 2016), it is difficult

¹⁰ Psychologists appear to share this view, as Sorensen 2008 notes (quoting Gibson 1979, on the role of surfaces for vision, as a representative example). Note that, although surfaces are most often discussed in this context, it is clear that surfaces *per se* do not matter—what matters is that they happen to be the most accessible part of the object.

to see how I could perceive an F other than by way of perceiving *some* part of it—and no other part than its most accessible one seems plausible. In any case, and with some risk, I will simply grant the view here. It follows that I perceive the muffin because I perceive its most accessible part. But now it becomes irresistible to extend this explanation to the appearances: to say, in other words, that I perceive the muffin *as a muffin* because I perceive its most accessible part *as a muffin*. This is clearest if we understand the most accessible part as the visible part of the muffin’s surface, which does indeed appear as a muffin (consider that, were the rest of the muffin surreptitiously destroyed, my perception of it would intuitively shift to an illusion of a muffin). But we needn’t insist on this understanding. The point, instead, is that the muffin’s appearance is quite naturally explained by the appearance of that part of it most directly causally responsible for the muffin’s perception. And, given this, how else but as a muffin could the part appear? Were the part to appear merely as a visible surface, for instance, then it would seem at most to follow that the muffin appears that way too. And, of course, it doesn’t: I see the muffin as a *whole* muffin, rather than as its surface. If the appearance of its most accessible part explains this fact, then that part should appear similarly.

One might object that, even though perceiving the muffin requires perceiving its most accessible part, the stronger claim about appearances does not follow. In particular, one might say that the most accessible part appears as it does—say, as a visible surface—and that the muffin nevertheless appears as a muffin simply because I (as perceiver) know that surfaces tend to correlate with their greater wholes. I do not want to insist absolutely against this suggestion. However, it is worth noting that such a view is not obviously available to the relationalist (and illusionist), who typically wishes to explain perception *and* perceptual appearances by appeal to the (parts of) objects themselves. Put another way, what ‘I (as perceiver) know’ is more suggestive of a representationalist account of perception: one on which, for example, I perceive a muffin as a muffin in virtue of some causal relation to its most accessible part, together with stored representations of muffins and their typical parts (cf. Nanay 2022). To the extent that this goes contrary to the relationalist impulse, relationalists will have reason to prefer the alternative.

2.3 The Digestion Analogy

So much for premise (8). To justify premise (9), we must show that, necessarily, the most accessible part of a perceived F is an internal non-F—again, that internal non-F to which the illusionist appeals. Let us return, arbitrarily, to the perceived muffin. We may grant for the reasons discussed above that said muffin *has* a most accessible part. But why think that this most accessible part is—rather than the more familiar visible surface—a cluster of photoreceptors (or some such internal non-muffin)? I assume that, *were* the cluster a part of the perceived muffin, it would be more directly causally related to the relevant sense organs of the perceiver than any other part thereof. Given this, it will suffice to show that the cluster *is* a part of the perceived muffin—a tall enough order on its own.

When is one object part of another? Unfortunately, no answer to this question has reached consensus (cf. van Inwagen 1990’s ‘general’ and ‘special’ composition questions). Neither formal mereology nor empirical observation appear to settle the matter: the former at best presupposes an answer and the latter at best underdetermines it (cf. Rosen and Dorr 2002). Metaphysicians therefore often appeal to extra-empirical virtues, such as parsimony (perhaps *no* object is part of another), conservatism (perhaps the *only* parts are those recognized by common sense), or anti-arbitrariness (perhaps if *some* objects are parts of others, then *all* objects are parts of others). But these considerations remain both controversial and highly general (cf. Korman 2015; Bricker 2020). Because of this, and because my goal is only to motivate the plausibility of our quite specific tall order, analogy is our best bet.

Suppose that an animal is digesting food.¹¹ This process is arguably constituted by relations between various objects: the food is chewed and swallowed, broken down by acids in the stomach, converted to waste in the intestines, etc. In this way, digestion resembles (relationalist) perception. We might identify the food itself as (loosely speaking) the ‘object’ of digestion. At a certain stage, this object becomes highly integrated with objects inside the animal, mixing with bile, microbes, and the like. It is reasonable to say that, eventually, these latter objects are *so* well-integrated with the food that they become a *part* of it—whereas other objects, like the stomach, do not. As a matter of fact, this adoption of parts seems *necessary* for digestion to occur. If the non-mereological relations between food and (for instance) microbe just described resemble those between perceived muffin and photoreceptor cluster, then we will have some analogical reason for endorsing the tall order.

The key resemblance here, I submit, is *dependence*. Specifically, the (properties of the) food and microbe seem to depend upon each other in ways uniquely suggestive of parthood—and the perceived muffin and photoreceptor cluster depend upon each other similarly. For instance, the water content of the microbe might depend partly on how much it has lost to the food through plasmolysis, the colour of the food might depend partly on pigments in the microbe, and so on. These dependencies are also far more pronounced than, say, those between the food and stomach—the latter are ‘less integrated’ than the food and microbe. Now compare the perceptual case. The photoreceptor cluster’s activity ordinarily depends on the presence of a muffin, given that it is by construction a highly specific, spatio-temporal arrangement of cells. (This point only becomes more plausible as the internal non-F is more clearly specified: say, as whatever is needed to account for defiant hallucinations, such as the total pattern of neurons activated in perception.) One might even argue that the properties of the perceived muffin—such as its appearing a certain way to me—depend partly on the electrochemical information contributed by the photoreceptor cluster. As in the digestive case, these dependencies also seem more pronounced than others. The rest of the brain and other sensory organs, for example, are receptive to far more than just muffins. If these kinds of dependencies suggest parthood in the digestive case, then analogical reasoning suggests the same for perception.

That said, there are at least three important *disanalogies* worth considering. First, the microbe and food are spatially close to one another, to the point of physical contact, whereas even a *perceived* muffin might be rather far away from my brain. No doubt, this *is* a difference. But it is not a *relevant* one: the existence of *scattered* composite objects, whose parts are spatially disconnected, is widely recognized by metaphysicians (see esp. Cartwright 1975; Lewis 1986; Sider 1997).¹² The books in a volume, for instance, might be dispersed across a library; the solar system is an entity whose celestial parts are often *extremely* distant from one another (Korman 2011). In fact, some have

¹¹ The analogy between perception—or, at least, experience—and digestion has been discussed by others: e.g., Searle 1997 and Barnes 2005, on Sartre).

¹² Recently, Byrne and Manzotti 2022 have defended a ‘Gerrymandered Object Theory of Hallucination’, or ‘GOTH’. On GOTH, hallucinations are sometimes perceptions of ‘gerrymandered’ material objects: objects whose parts are not typically recognized as belonging together, such as the mereological fusion of Mount Everest and my pinkie toe. Much as on intramerism, some of these gerrymandered objects are scattered. Nevertheless, intramerism differs from GOTH by the former’s crucial appeal to *internal* parts, which—as argued above—are required to address defiant hallucinations. Byrne and Manzotti suggest that past (perceived) objects might play this role, and thus they face the concerns raised in section 1 (in addition to the apparent—yet more controversial—possibility of a defiant hallucination with no prior perceptual experience).

argued that *all* material objects are scattered at the atomic level, since no two atoms (or atomic nuclei) truly ‘touch’ (Conee and Sider 2014). Should this be true, the difference between digestion and perception is one of quantity rather than kind: the microbe and surrounding food are distant to some degree, albeit a lesser degree than (say) the cluster and muffin.

Second, one might hold—partly because of the quantitative difference just described—that the muffin would not *stay* a muffin were it to gain a photoreceptor part (whereas the food *stays* food when it gains a microbial part). More specifically, the muffin would seem to become a new *kind* of object, a *muffin**, rather than merely becoming a larger and more unusual muffin. This possibility would, in fact, be worse than a mere disanalogy. Together with intrameralism and relationalism, it would suggest that the perception of a muffin occurs when a *non-muffin alone*—a muffin* but no longer a muffin—constitutes that perception, which cannot be right.¹³ The issue here, concerning changes in kind induced by changes in composition, is a subtle one. After all, it is widely observed that changes in composition can induce changes in some kinds but not others. When the ingested substance gains a microbial part, for instance, it still falls under the kind *food*, but it clearly no longer falls under the kind *a mass with n microbes* (it rather becomes a mass with n+1 microbes). If the kind *muffin* is more like the kind *a mass with n microbes* than it is like the kind *food*, then the analogy might well fail. That said, the very same subtlety can be used to avoid this failure. For although adding an internal part *does* seem to change *some* of the muffin’s kinds—say, from counting as a (*totally*) *non-neural object* to counting as a (*partially*) *neural one*—it does *not* seem to change the kind of thing the muffin is *perceived as being*: namely, a muffin. Generalizing, defeasibly, from the muffin to other perceived objects, the disanalogy and its negative consequences are avoided.

A final disanalogy concerns what we might call *process-dependence*.¹⁴ Presumably, the muffin would *lose* its photoreceptor part, and the food would *not* lose its microbial part, were the processes of perception and digestion respectively to halt. Perhaps this difference in process-dependent parthood undermines the analogy. But perhaps not. Consider a rogue planet, which falls into the orbit of a star system. The planet thereby becomes part of the system, and remains that way for the duration of its orbit. If the orbiting process (somehow) halts, however, the planet will cease being a part of the system—either because it is flung too far away, or because its orbit is what made it a part in the first place, or what have you. This example, and others like it, show that process-dependence is no obvious bar to parthood—even when the parts are (as in the rogue planet and intrameralist cases) spatially scattered.

2.4 The Intrameralist Package

I do not insist that our tall order has been decisively met. More generally, I do not insist that premises (8) and (9) are now beyond reproach. Instead, I hope only to have provided some independent support for both premises, and thus also some support for intrameralism as an unproblematically overdetermined response to the screening-off argument. Given this, some clarifications are in order.

If and when an F is perceived in virtue of the perception of an internal non-F part, I will refer to that part as an *F intramer*. So, again, a photoreceptor-cluster *part* of a perceived muffin is a muffin

¹³ It also suggests that, on intrameralism, I perceive a muffin* whenever I seem to be perceiving a muffin (simpliciter). Thanks to two anonymous referees for raising these concerns.

¹⁴ Thanks to an anonymous referee for posing this objection.

intramer.¹⁵ The illusionist who endorses intramerism in response to the screening-off argument, therefore, commits to the existence of intramers, at least for the relevant choices of F. At the same time, the ‘relevant choices’ are simply those for which defiant hallucinations are (putatively) possible. And *this* seems to hold for *any* choice of F: a Boltzmann brain could hallucinate anything from muffins to mountains to molehills, whether visually or auditorily or gustatorily or what have you.¹⁶ In this way, the illusionist-intramerist seems committed to the existence of intramers as a general element of all perception. It is nevertheless important to recall that this result does *not* require any kind of idealism or (let us say) neuralism, on which the existence of external objects somehow depends on that of internal ones. Rather, and again, it is to say only that an external object gains a *temporary internal part*—its ‘tip’, an intramer—in the course of perception. This is certainly revisionary. But it is not as radical as the idealistic (or neuralistic) alternatives.

An illusionist who accepts intramerism can then be understood as endorsing the following package of views:

Intramerist Package Necessarily, any perception of an F is (partly) constituted by that F, whose intramer is illusorily perceived as an F in the case of defiant hallucination.

The intramerist package connects relationalism with intramerism, and intramerism with illusionism, simultaneously accounting for ordinary perception, the threat of defiant hallucination, and the screening-off objection to illusionism. On this package, defiant hallucinations are explained away as a kind of perceptual *synecdoche*—a situation in which an object’s part is misperceived as its (ordinarily present) whole. I hope to have at least motivated certain parts of this package. But it will help to address some objections.

3 **Objections and Replies**

3.1 **We do not See Photoreceptors**

The most obvious objection to intramerism (or to the overall intramerist package) is this. When I see a muffin, I do not also see a photoreceptor cluster. Intramerism entails that I do see such a cluster. So, intramerism is false.

But the word ‘see’ (more generally, ‘perceive’) is ambiguous in a crucial way. On one reading, it is purely extensional: I see an F in the sense that I am (visually) perceptually related to that F, such as by way of constitution, however it appears to me. On another reading, ‘see’ is phenomenological: I see an F in the sense that an F appears to me as an F, however I am perceptually related to it. When ‘see’ has the former reading, the objection’s first premise—‘when I see a muffin, I do not also see a photoreceptor cluster’—simply begs the question against the intramerist. Everyone will agree that I do not *seem* to see a cluster when I see a muffin, not least because nothing appears to me like a cluster in such a case. But these phenomenological facts do

¹⁵ ‘Intramer’ comes from ‘intra (within) + mer (part)’ (hence also, ‘intramerism’). I use the term as a technical convenience, unrelated to its use in (e.g.) cellular biology.

¹⁶ As an anonymous referee points out, it is unclear how well intramerism extends to multi-sensory perception. That said, there are some interesting comments in O’Callaghan 2016 which already seem to align with intramerism: namely, that even multi-sensory perceptual objects are mereologically structured. For considerations of space, I must leave this issue for another time.

not bear on the extensional reading currently assumed (specifically, the illusionist will insist that things we are perceptually related to might appear quite different than they actually are). If, instead, we take the phenomenological reading of ‘see’, then the first premise *will* be true. When I see a muffin, I certainly do *not* see a cluster *as a cluster*. But now the objection is toothless: intrameralism does *not* require that I see the cluster as a cluster, but only that I see it *as a muffin*. Put another way, intrameralism leaves the phenomenology presupposed by this objection altogether untouched.

3.2 We are not Always Illuded

A related objection says that, on intrameralism and quite implausibly, there is always an illusory element to perception. For instance, seeing a muffin as a muffin still *involves* seeing a cluster as a muffin, and thus seeing a non-muffin as a muffin, and thus a muffin illusion—and that seems wrong.¹⁷

The response here appeals to premise 8 of the indirectness argument: necessarily, if an F is perceived as an F, then this is because the most accessible part of that F is so perceived. This premise already entails—*without* intrameralism—that there is always an illusory element to perception. For example, it entails that perceiving a muffin as a muffin involves perceiving the most accessible part of a muffin as a muffin, which part is unlikely to be the entire muffin itself. So, if the present objection is a problem for intrameralism, then it is also a problem for premise 8. But that premise was supported on independent grounds. So, the threat to intrameralism is avoided. Of course, one might respond that—again *without* intrameralism—the most accessible part is probably something quite ordinary, like the outer crust of the muffin. Perhaps that is enough to make its perception non-illusory (or at least illusory in some unproblematic sense). But *why* would it be enough? The most natural answer seems to be that the crust is *part* of the muffin. In that case, however, intrameralism *also* will not require illusory perception (or it will do so unproblematically), since the intramer cluster is *also* part of the muffin. More generally, the point is that intrameralism merely changes the details of a seemingly illusory element already present in perception, and these changes do not make things any more or less problematic—if, as I have argued, premise 8 is true.

3.3 Intrameralism Loses Direct Access

Another kind of objection is epistemic (cf. a similar concern in Beck 2021). We said above that new wave relationalism is preferable to disjunctivism because it does a better job of guaranteeing genuine access to the external world. But new wave illusionism, and intrameralism in particular, seem to lose this access. After all, the perceptual object will now have internal parts even in perfectly ordinary cases. One might think that this entails a kind of indirect realism, in the sense that our perception of external objects is now mediated by internal objects (a point also made in Ali 2018). For familiar reasons, this would raise the spectre of external world scepticism.

But the existence of intramers does *not* entail indirect realism. One of the benefits of intrameralism is that parthood is an especially ‘tight’ relation between objects. Again, when I perceive a muffin, it is not as if my perception is ‘mediated’ by its outer crust—precisely *because* that crust is part of the muffin. Similarly, the (purported) fact that a photoreceptor cluster is literally part of a perceived muffin is meant to avoid such mediation. Could it be that a muffin intramer is a mediator because it is a *detached* part of the perceived muffin—whereas the outer crust is attached to it? No: as discussed above, even the crust is not likely attached in any sense which qualitatively differs from

¹⁷ Thanks to an anonymous referee for raising this objection (and for the phrase ‘illusory element’).

the intramer (everything is scattered, to some degree). Could it be that the intramer is a mediator because it is *fully enclosed* in another material object, the eye or head? No again: a book volume distributed across several rooms has equally enclosed parts. If the intramer *is* a mediator, then this must be because it is a part simpliciter, rather than a detached or enclosed part (or what have you). Since parthood is so tight a relation, however, it is not likely to imply this mediation.

The point about ‘tightness’ can be brought about by a comparison with a paradigm form of indirect realism, such as a crude sense datum theory. On that theory, a muffin is perceived (partly) because mind-dependent sense data—concerning colour, size, etc.—are instantiated. At the same time, it is possible for those sense data to instantiate even in the absence of a muffin (indeed, that is part of the motivation for a sense datum theory). This discrepancy, between instantiated sense data and non-existent muffin, is precisely what makes their relationship ‘looser’ than the parthood relation of intrameralism. For although a part qua object can exist without its whole (a shed cell remains a cell), a part qua part cannot: being a part *just is* being ‘in’ a whole. In contrast, a sense datum qua object *and* qua sense datum *can* exist without its external counterpart: to be a sense datum is *not* to be something instantiated only when its counterpart is present. More simply, a muffin intramer—*not* a mere photoreceptor cluster, but one which is *part* of a perceived muffin—cannot exist without that muffin. A muffin sense datum, in contrast, can. This is what makes parthood a tight relation, and, relatedly, what prevents intrameralism from collapsing into a form of indirect realism.

It is also worth noting that similar reasoning helps to distinguish intrameralism from representationalism. To the representationalist, a muffin is perceived because some state of the brain is or realizes a kind of symbol, whose semantic content is satisfied by an external muffin (perhaps via causal relations between brain and muffin). Unlike the sense datum theorist, representationalists are not indirect realists. They do not say, for instance, that we perceive the muffin by perceiving a muffin symbol; rather, it is that satisfaction of that symbol is what perception is (at least in part). Even here, however, there remains a sense in which the representationalist’s relation between symbol and muffin is ‘looser’ than the intrameralist’s parthood relation. For a muffin symbol *even considered as a muffin symbol* can be tokened without a corresponding muffin—this is, much as for the sense datum theory, a common motivation for representationalism. Consequently, even if representationalism is not a form of indirect realism, it requires a kind of loose mediation *in comparison with* the tightness of parthood. Intrameralism therefore seems to avoid inner mediation *at least as far as* (and probably more than) representationalism does.

3.4 Intrameralism Flouts the Relationalist Spirit

A final objection is quite broad: intrameralism avoids the hallucination and screening-off arguments by saving *only* the letter of relationalism, while ceding its spirit. Some readings of this objection have already been addressed. For instance, part of the ‘spirit’ of relationalism might be its demand for access to the external world. But perhaps there is a broader point. Relationalism was supposed to preserve a kind of naïve realism, on which we perceive the external world mostly as it is. New wave illusionism forces us inside the head in the case of defiant hallucinations, and intrameralism (by consequence) forces us *partly* inside the head in *all* cases of perception. That seems contrary to the naïve view, and thus to the spirit of relationalism.

Unsurprisingly, I do not see things this way. Intrameralism is undeniably heterodox. But it is meant to *bolster* the relationalist theory of perception against a hard counterexample: defiant hallucinations. It is only given the threat of these hallucinations that we were pushed inside the head, toward the possibility of internal illusions. Now, such illusions *do* seem to threaten the spirit of relationalism. If *some* experiences are perceptions of things inside the head, then we risk opening

the floodgates to all sorts of difficulties for the naïve view.¹⁸ Intrameralism resolves one such difficulty, screening-off, and its unusual consequences for ordinary perception strike me as a mere elaboration of the naïve view. We still perceive the world mostly as it is, except that doing so requires the world to grow into our heads—defiant hallucinations are just the occasional illusory perception of those growths, the intramers.

Of course, a relationalist might still insist that the spirit is lost. But the overall picture defended in this paper—the intrameralist package—still gives us an independently plausible letter. And perhaps that letter is enough.

Acknowledgements

For extremely helpful feedback on earlier drafts of this paper, I am grateful to Hubert Marciniak, Farid Masrouf, Kiel McElroy, anonymous referees from the *Australasian Journal of Philosophy*, and audiences at the 114th annual meeting of the Southern Society for Philosophy and Psychology.

Funding Information

There is no funding information to report.

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¹⁸ Then again, we will have to explain *internal perceptions*—hunger pangs, palpitations, etc.—anyway. So, the move inside the head is probably inevitable (and denied only arbitrarily; Watzl 2010), even for a relationalist. This, incidentally, makes the appeal to internal illusions even less unusual. It also dovetails in some ways with views on extended cognition (as in Clark and Chalmers 1998).

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