

Against the very idea of a perceptual belief

Grace Helton¹ | Bence Nanay²

¹Princeton University, Princeton, NJ, USA

²Centre for Philosophical Psychology,
University of Antwerp, Antwerp, Belgium

Correspondence

Bence Nanay, Belgium.

Email: bence.nanay@uantwerpen.be

Funding information

FWO research grant, Grant/Award Number: 726251; FWF-FWO grant, Grant/Award Number: G0E0218N; ERC Consolidator grant, Grant/Award Number: G0C7416N

Abstract

The aim of this paper is to argue that there is no unproblematic way of delineating perceptual beliefs from non-perceptual beliefs. The concept of perceptual belief is one of the central concepts not only of philosophy of perception but also of epistemology in a broad foundationalist tradition. Philosophers of perception talk about perceptual belief as the interface between perception and cognition and foundationalist epistemologists understand perceptual justification as a relation between perceptual states and perceptual beliefs. I consider three ways of cashing out the difference between perceptual and non-perceptual beliefs (semantic, justificatory, and etiological) and argue that none of them works. Finally, I explore the possibility of understanding perceptual justification without relying on the concept of perceptual beliefs.

1 | INTRODUCTION

The concept of perceptual belief is one of the central concepts not only of philosophy of perception but also of epistemology in a broad foundationalist tradition. Philosophers of perception talk about perceptual belief as the interface between perception and cognition and foundationalist epistemologists understand perceptual justification as a relation between perceptual states and perceptual beliefs. I argue that there is no unproblematic way of delineating perceptual beliefs from non-perceptual beliefs.

Importantly, there is no unproblematic concept of perceptual belief that could fulfill the theoretical role in standard foundationalist theories of perceptual justification. Perceptual justification, according to standard foundationalist theories is a two-step process: Perceptual states justify perceptual beliefs and perceptual beliefs justify non-perceptual beliefs. Suppose you are looking at a red apple. Your perceptual state gives rise to a perceptual belief that the object in front of you is red. Further, your

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2022 The Authors. *Analytic Philosophy* published by John Wiley & Sons Ltd.

perceptual state justifies your perceptual belief.¹ That is the first step. The second step is that your non-perceptual beliefs (about apples, redness, and so on) are justified by perceptual beliefs. This is the standard foundationalist story about perceptual justification.

If, as I argue, there is no unproblematic way of delineating perceptual beliefs from non-perceptual beliefs, then this explanatory scheme needs to be reevaluated. Theories of perceptual justification have focused too much on perceptual beliefs as the gateway from perception to belief. My aim is to shift the discussion of perceptual justification away from the problematic concept of perceptual belief and towards the more straightforward relation between perceptual states and beliefs (perceptual or non-perceptual). This does not necessarily mean rejecting foundationalism wholesale and turning coherentist. But it would imply rejecting the importance of the concept of perceptual beliefs for perceptual justification.

What are perceptual beliefs supposed to be? What makes them stand out from all the other beliefs? The general thought is that perceptual beliefs enjoy a privileged epistemic status that other beliefs do not enjoy.² So there must be a sufficiently rich base of perceptual beliefs if it is to successfully account for our full range of external world knowledge (Brandom, 1994; Pryor, 2000).

The plan of the paper is simple: I go through the most widespread ways of defining perceptual beliefs and point out that all of them are problematic. This strategy has the obvious problem that it is always possible to argue that all the accounts I'm discussing and dismissing are irrelevant, whereas I am failing to address the really promising options. In order to avoid this worry, I discuss the three general approaches to defining perceptual beliefs (which, put together cover much of the logical space of how perceptual beliefs could be thought to be special, that is, different from non-perceptual beliefs):

- a) Perceptual beliefs are beliefs that stand in some special semantic relation with the perceptual states they are based on.
- b) Perceptual beliefs are beliefs that stand in some special justificatory relation with the perceptual states they are based on.
- c) Perceptual beliefs are beliefs that stand in some special causal relation with the perceptual states they are based on.³

There are various ways of cashing out each of these general approaches to perceptual belief and I will go through what I take to be the most widespread and most promising of them in Sections 2, 3, and 4, respectively. The conclusion will be that none of these ways of keeping apart perceptual and non-perceptual beliefs work. In Section 5, I argue that we can do justice to the concept of perceptual justification without any reference to perceptual beliefs as long as we think of beliefs as being more or less perceptual.

2 | SEMANTIC APPROACHES TO PERCEPTUAL BELIEF

In one natural view of perceptual belief, perceptual beliefs are about the same objects as the perceptual states that elicit them. Alston, for example, makes this a strictly necessary condition: “B is a

¹In what follows, I mean doxastic justification when I write “justification.” The argument could be extended to propositional justification, but given the variety of views about the relation between doxastic and propositional justification, this extension could take a variety of different forms. Also, I will talk about perceptual states and not perceptual experiences as perceptual states can be unconscious (see Berger et al., 2018 on the possibility of unconscious perceptual justification).

²I'm bracketing issues about testimony for the sake of simplicity here.

³These approaches can be, and sometimes are, combined, see, for example, (Chudnoff, 2015), see esp. p. 212.

perceptual belief if B is about a perceived object O, and B is either (a) (at least partially) based on a perceptual experience of O or (b) is part of a perception of O.” (Alston, 2005, p. 181). On this, “shared object” view of perceptual belief, some belief is a perceptual belief only if it is about the same object(s) as the perceptual state which elicited it. This condition permits that perceptual beliefs might attribute different properties to the relevant objects than does perception itself.

I argue that the “shared object” approach is too strong with respect to beliefs emanating from non-visual modalities, in that it excludes too many of these beliefs from the class of perceptual belief. In particular, it makes the class of perceptual belief too impoverished to render the concept of perceptual justification feasible.

The “shared object” approach to perceptual belief is too strong with respect to the non-visual modalities because on most accounts of auditory and olfactory sense modalities, the objects of auditory or olfactory perceptual states are not the same as the objects of the beliefs elicited by these non-visual experiences. The objects of auditory or olfactory perceptual states are sounds and odors, whereas the objects of the beliefs elicited by these non-visual experiences are chairs, leaves of mint, trains, whistles, lemons, cars, dogs, and so on.

Consider the auditory sense modality. It is a common view that the objects of auditory experience are *sounds* (see, e.g., O’Callaghan, 2007, p. 609, Matthen, 2010; Nudds, 2010, see also Young and Nanay 2022b). Whatever sounds are (sound waves, properties of objects, vibration events, etc.), they are not the sorts of things that generally enter into our auditorily-elicited beliefs. Suppose you hear the whistle and clanking of a passing train. Most of your beliefs elicited by that perceptual state will be about the passing *train*, e.g., “that train is moving fast,” “that’s a loud train,” and so on. Only very few, if any, of your beliefs will be about the *sounds* of the train, e.g., “that sound is loud,” “that sound is of a different pitch than that one,” and so on. Though you might form some such beliefs, these are likely to amount to a very small portion of all of your beliefs elicited by the auditory perceptual state. The problem with this view is that such beliefs are likely to contain scarce information about the world, so their power to ground further beliefs about the external world is presumably extremely limited.⁴

In light of the problems the “shared object” view of perceptual beliefs face, one might be tempted to move to a related but importantly different account of perceptual belief in which perceptual beliefs have the same contents—or very nearly the same contents—as the perceptual states that elicit them. Call this view the “shared content” approach to perceptual belief.

Jack Lyons describes this as the “standard” picture of perceptual beliefs (which he himself disagrees with): “My belief that p is a perceptual belief iff my belief that p is based on a perceptual experiential state *with the content that p*” (2005, p. 249, emphasis added, see also 2015).⁵ I am not entirely sure that this biconditional counts as the standard picture of perceptual beliefs, but what definitely is standard is the necessary condition – that “my belief that p is a perceptual belief only if my belief that p is based on a perceptual experience with the content that p.” This way of thinking about perceptual

⁴The same considerations apply to olfaction, where odors are often taken to be the objects of our olfactory perception, whereas the objects of (most of) our perceptual beliefs that are based on olfaction are about the objects that have the odor (see Batty, 2010, 2011; Lycan, 2000). And on at least some views of vision, the object of perception is a spatiotemporal region (Clark, 2000, Nanay forthcoming a), whereas perceptual beliefs are about ordinary objects.

⁵Tyler Burge’s complex account of perceptual beliefs may be a version of this content-based approach, albeit a more sophisticated one. He writes that “The representational content of elementary perceptual beliefs depends on perceptual representation. Such beliefs use the representational content of perceptions and fit it into propositional networks” (Burge, 2010, p. 280). So the content of perceptual states is used in perceptual beliefs but in such a way that it fits into propositional networks (or, as he says elsewhere, embeds them “in capacities for propositional inference” (Burge, 2010, p. 25). It is difficult to tell just how much the perceptual content changes as a result of this conceptualization. Analyzing Burge’s account of perceptual belief would require an entirely different paper.

beliefs is a background assumption of most debates about perceptual justification, for example, the one about whether perceptual experiences justifies perceptual beliefs immediately (see Silins, 2008 for an overview).

The problem with this approach (and not just with the biconditional but also the necessary condition) is that it presupposes that the content of perceptual states and beliefs are, in general, of the same kind. More specifically, it presupposes that we can attribute the content “that *p*” to perceptual states – that perceptual states have propositional structure, as do belief states. If the two propositions are the same and the belief that *p* is based on the perceptual state that *p*, we get a perceptual belief.

But this is a deeply problematic way of thinking about perceptual content for the following four reasons.

First, I do not know of any philosopher who currently holds the view that perceptual content can be exactly the same as belief content (but see Jackson, 1977). And strictly speaking, we can only use the “standard” picture of perceptual beliefs if the perceptual content is exactly the same as the belief content: “that *p*.” But many philosophers allow for some differences – while nonetheless maintaining that we should use propositional content as a model for understanding perceptual content. Much of these proposed modifications aim to address the problem of the particularity of perception. The general idea is that unlike the content of beliefs, perceptual content somehow depends constitutively on the token perceived object. These “Russellian,” “gappy,” “singular,” “object-involving,” or “singular-when-filled” conceptions of perceptual content (see, e.g., Schellenberg, 2010; Tye, 2007), however, are nonetheless conceptions of propositional content – as David Chalmers says, these accounts are thinking about perceptual content as a “structured complex” (Chalmers, 2006, p. 54 – Thompson, 2009 describes them even more aptly as “structured propositions”). None of these approaches would allow for both the perceptual and the belief content to be the very same “that *p*.”

Further, there is more and more criticism of the general approach to perceptual content I outlined in the last two paragraphs. According to these criticisms, we should resist the temptation to start with belief content and instead use a more basic way of thinking about content in general that can subsume both belief content and perceptual content. We have no reason to believe that all mental representations are linguistically or propositionally structured (see Crane, 2009, Nanay, 2013, Peacocke, 2019, but see also Siegel, 2010). We may say that “I see that there is a coffee cup in front of me,” but that is a perceptual report, and the fact that the perceptual report has the content “that *p*” is very poor evidence for the claim that the perceptual state itself has the content “that *p*.” Some (but not all) mental states have content. Some of these (but not all of them) have propositional content. But perceptual states don't. If we choose this way of thinking about perceptual content, then the “standard view” of perceptual beliefs is a non-starter.

Another approach to understanding what propositional content is appeals to the concept of possible worlds. The general idea is that the content of a representation is the set of possible worlds where this representation is correct. So the content of a perceptual state is the set of possible worlds where this perceptual state is correct and the content of a belief is the set of possible worlds where this belief is true. And now perceptual beliefs could be defined as beliefs the content of which is the same as that of the perceptual state it is based on. This amounts to the claim that a belief is a perceptual belief if and only if the set of possible worlds where it is true is the same as the set of possible worlds where the perceptual state it is based on is correct. Given that perceptual beliefs abstract away from some specificities of perceptual states, this will not do. My perceptual belief that there is an apple in front of me is true in possible worlds where very different perceptual states are correct: the perceptual state of seeing a red apple and the perceptual state of seeing a green apple, for example. So a more charitable reading of the possible world's version of the shared content view would be to say that a belief is a perceptual belief if and only if the set of possible worlds where the perceptual state this belief is based on is correct is a subset of the set of possible worlds where the belief is true. The problem with this proposal is that

it would make beliefs about necessary truths count as perceptual beliefs. The set of possible worlds where my perceptual state right now is correct is a subset of the set of possible worlds where $2 + 2 = 4$ is correct (as this set contains all possible worlds). But we should not thereby conclude that the belief about $2 + 2 = 4$ is a perceptual belief. And there are no easy workarounds here – we cannot just restrict the scope of the claim to beliefs that are not necessarily true (which would be an obvious move) because the same argument would work with the set of possible worlds where the Earth revolves around the Sun.

Further, even if we grant that perceptual content is propositional, there has been a major debate about whether perceptual states have conceptual or nonconceptual content. If perceptual content is nonconceptual, it will never have the same content as the belief it gives rise to. So no belief will count as a perceptual belief.

A final option for the proponents of the same content approach to perceptual belief would be to loosen the condition that the content of the perceptual state needs to be exactly the same as the content of the perceptual belief it gives rise to (maybe insisting that they only need to be sufficiently similar). But it is difficult to see how this would work given the radical differences between the way perception represents and the way beliefs represent. It is an open question of how best to characterize these differences (analog/digital, imagistic/non-imagistic, vertically articulate/not vertically articulate, and so on, see Block, 1983, Dretske, 1981, Evans, 1982, Goodman, 1968, Haugeland, 1981, Kulvicki, 2007, 2014, 2015, Lewis, 1971, Matthen, 2005, Peacocke, 1986, 1989 for various versions of this distinction). If perceptual states represent in an analog manner, whereas beliefs represent in a digital manner, perceptual content will be radically different from belief content. So no belief will ever count as a perceptual belief.

3 | JUSTIFICATION-BASED APPROACHES TO PERCEPTUAL BELIEF

The second option would be to use the concept of justification itself to delineate perceptual beliefs from non-perceptual beliefs. The general idea is that perceptual beliefs are in closer justificatory relation to perceptual states than non-perceptual beliefs (see McGrath, 2018 for a thorough discussion of this approach, esp. p. 111).

One way of making this general idea more precise would be to say that perceptual beliefs, unlike non-perceptual beliefs, are beliefs whose prima facie justification does not depend on evidential relation to any other beliefs. A nice way of demonstrating the problems with this definition is to consider the importance of amodal completion in everyday perception.

Amodal completion is the representation of those parts of the perceived object that our senses do not carry information about. In the case of vision, amodal completion is the representation of occluded parts of objects we see: When we see a cat behind a picket fence, our perceptual system represents those parts of the cat that are occluded by the picket fence. We also get amodal completion in non-visual sense modalities (Young & Nanay, 2022a). In tactile perception, it is the completion of those parts of the objects we touch that are not in direct contact with our hand, for example. We complete those parts amodally.

In the case of audition, when we hear a loud bang while listening to a tune, the auditory system continues to represent the tune even in that brief moment when the bang is the only auditory stimulation. What we have here is a form of temporal occlusion, where the bang blocks (we could say, it occludes) part of the tune. A popular demonstration of auditory amodal completion is the American late night show host Jimmy Kimmel's segment "A week in unnecessary censorship," where he beeps out completely harmless words from famous politicians, making them sound like expletives.

Amodal completion is ubiquitous. There are very few everyday perceptual scenarios without amodal completion. We need to use amodal completion in order to represent those parts of the perceived scene that are behind a non-transparent object. And we also need to use amodal completion

to represent those parts of non-transparent perceived objects that are facing away from us. In short, with the exception of very simple two-dimensional visual displays, amodal completion is a constitutive part of the way we represent perceived objects (Nanay, 2010, 2018b, forthcoming b).

Suppose that I am looking at an everyday scene: my coffee cup on the table. My perceptual state is a mixture of sensory stimulation-driven perception and amodal completion. The part of the table that is occluded by the coffee cup is amodally completed as is the backside of the coffee cup. Given the importance and ubiquity of amodal completion in everyday perception, if a perceptual belief is justified, it is partially justified by amodal completion.

Crucially, amodal completion is often (not always) sensitive to our beliefs and background knowledge (Ban et al., 2013; Chen et al., 2009; De Grave et al., 2008; Hazenberg et al., 2014; Hegdé et al., 2008; Lommertzen et al., 2009; Plomp et al., 2004; Vrins et al., 2009). Some instances of amodal completion may be fully bottom-up driven, like the completion of shapes purely on the basis of Gestalt forms (that can go against our best judgments). But more often (and almost always in everyday scenarios), amodal completion is driven in a top-down manner as in the case of seeing the cat behind the picket fence. Depending on what cats I encountered before, the way I complete this figure would be very different. And this is not a merely causal dependence relation: The epistemic status of amodal completion (as a cat and not as unconnected cat parts) depends on my beliefs (about cats) and background knowledge. Higher order knowledge and expectations play an important role in amodal completion – as the Jimmy Kimmel example shows. In fact, we have empirical evidence that under experimental conditions, human subjects consider amodally completed features more reliable than not amodally completed ones (Ehinger et al., 2017).

Here is an evocative example, taken from the 1980s classic comedy *Top Secret*. One of the many visual jokes of the film has the main character crawl in the mud, shown in close up, and suddenly, he faces two East German military boots, framed in a way that we can only see the boots. He looks scared and the camera zooms out, revealing that it is only two boots standing in the mud, there is no soldier in them. Again, we use amodal completion to represent what is outside the frame, and we use a lot of high-level information to complete what is outside the frame, for example, the knowledge that military boots usually continue upwards in soldiers.

Given that amodal completion is not just causally but also epistemically sensitive to our beliefs and background knowledge (see Helton & Nanay, 2019), it is just not the case that perceptual beliefs are beliefs whose prima facie justification does not depend on evidential relation to any other beliefs. The prima facie justification of perceptual beliefs depends on amodal completion and the prima facie justification of amodal completion depends on our beliefs and background knowledge.

Another version of the justification-based approach to perceptual beliefs could avoid this line of criticism by loosening the justification condition significantly. This version would be to define perceptual beliefs as beliefs that are such that a perceptual state is necessary for its justification. But this definition would rule in many beliefs that are clearly not perceptual beliefs. The belief that I saw a squirrel when I was 4 is a paradigmatic example of a non-perceptual belief, but a perceptual state is necessary for the justification of this belief.

4 | ETIOLOGICAL APPROACHES TO PERCEPTUAL BELIEF

In light of the preceding worries about justification-based, object-based, and content-based approaches to perceptual belief, one might be tempted to characterize perceptual belief in a way that characterizes perceptual belief by its origins. There are many versions of this etiological approach. I'll proceed from the simpler to the more sophisticated.

One could simply say that perceptual beliefs are beliefs that are caused by (or based on) perceptual states. But my belief that I saw a squirrel when I was 4 is also caused by a perceptual state, yet, it is supposed to be a paradigmatic example of a non-perceptual belief. In response to these worries, we could try to put some restrictions on what this causal relation may or may not be. We could say that this causal relation needs to be direct or unmediated – the problem with the squirrel belief is that it was caused in an indirect or mediated manner.

It is difficult to make sense of how directness would work as a condition for the causal relation in this context as there are empirical reasons to think that perceptual states do not cause any beliefs directly, but rather in a way mediated by, for example, working memory representations. If directness means that perceptual states cause perceptual beliefs without the mediation of any other beliefs,⁶ then this is empirically false, for reasons similar to the ones discussed in the last section. As we have seen, perceptual beliefs are, to a significant extent, the result of amodal completion. And as amodal completion can depend on our beliefs and background knowledge, perceptual beliefs are not formed in a way that bypasses all other beliefs.

If, by contrast, directness means that perceptual states cause perceptual beliefs without conscious inferences,⁷ then this restriction would still fail to rule out some paradigmatic examples of non-perceptual beliefs like the belief that this is one of the several apples that my neighbor brought over yesterday (as this belief is not a result of a conscious inference).

But maybe directness is not the right constraint to add. We could add the lack of temporal delay as the relevant constraint on the causal link between perceptual states and perceptual beliefs.⁸ This would surely rule out the squirrel example. But it would not rule out the apple example. Further, it would also rule out some paradigmatic examples of perceptual beliefs. Suppose you are rushing to your office and you run past someone who seems familiar but then in a couple of seconds realize that it was your old high school friend, Jane. You're rushing by her at T1 and you form the perceptual belief about Jane at T2. There are a couple of seconds between T1 and T2. So proponents of the importance of no temporal delay in characterizing the causal link between perception and belief would need to say that this is not a perceptual belief. This may be a difficult bullet to bite as we clearly use beliefs of this kind to justify other beliefs in the same way as we do beliefs where the perceptual state is fully synchronous with the belief.

What I take to be the most promising version of the etiological approaches to perceptual belief is the following: Perceptual belief is the output of the perceptual system (Lyons, 2005, see also Quilty-Dunn, 2015). There are two main problems with this proposal. The first one is that there is no reason why the output of the perceptual system would need to be a belief. In fact, regardless of how we delineate the perceptual system (whether we identify, say, the visual system with early vision or with early plus late vision), the output does not seem to be a belief. Postulating that the perceptual system outputs a perceptual belief would be entirely ad hoc and in conflict with what we know about the perceptual system on the basis of the empirical sciences (see Mandelbaum, 2018 for discussion).

The second problem is even more serious. This general way of thinking about the perceptual system as taking stimuli as input and spitting out perceptual beliefs as outputs is based on a modularist

⁶An example of such restriction would be Sosa 2013, p. 186. This is also the picture Bill Brewer seems to presuppose when he says that in the case of the Muller-Lyer, the perceptual belief is of different length if the perceptual belief is the belief that is mono-caused by the perceptual state.

⁷See, for example, the proposal that perceptual belief “arises in a way that is phenomenologically immediate; in other words, it must not be the product of a conscious process of inference” (Millar, 2000, p. 73).

⁸According to Matt Soteriou, for example, perceptual beliefs are “occurrent cognitive states whose obtaining over an interval of time depend constitutively on the occurrence of the conscious experience one undergoes during that interval of time” (Soteriou, 2011, pp. 501–502).

way of thinking about perception. Modularism comes in many flavors. According to some fairly radical forms of modularism (Fodor, 1983), perception is an encapsulated subsystem that is sealed off from any kind of external influences from the rest of the mind, especially from our beliefs and knowledge. I will leave aside well-known empirical problems about this form of modularism when it comes to the well-documented top-down influences on perceptual processing at even the earliest stages: already in the primary visual cortex (Gandhi et al., 1999; Kok et al., 2012, 2014; Murray et al., 2002; Watanabe et al., 2011) and even the thalamus (O'Connor et al., 2002).

Weaker versions of modularism, which would be consistent with the recent findings about top-down influences on perceptual processing I mentioned above, may also be sufficient to support the view that perceptual beliefs are the output of the perceptual system. Jack Lyons, for example, argues that the perceptual system is modular in the sense that there are no direct voluntary inputs to it (see esp. Lyons, 2009, 2015; Quilty-Dunn, 2015). There can be voluntary but indirect inputs, and there can be direct but involuntary inputs, but these inputs cannot be both voluntary and indirect. The following argument is supposed to apply even against such accounts that are modularist only in this weaker sense.

If we reject modularism, talking about perceptual beliefs as the output of the perceptual system is a non-starter. Unless we endorse modularism, it is problematic to talk about the output of perceptual systems. This is obviously true in those non-modularist accounts that reject any firm perception-cognition boundary whatsoever (e.g., Lupyan et al., 2010). But even if we hold on to a strict boundary between perception and cognition, as long as we reject modularism, the etiological difference between perceptual and non-perceptual beliefs will disappear given that the top-down influences on the perceptual system amount to an abundance of non-perceptual states in the etiology of allegedly perceptual beliefs.

But even if we accept a version of modularism, we still cannot posit a perceptual system that outputs perceptual beliefs regardless of what else is going on in one's mind. One way of seeing this is to focus on the concept of attention. In the modularism debate, attention is a hotly debated topic. Those who argue that perception is a modular process would allow for attentional influences on perception (see Pylyshyn, 1999) but argue that these attentional effects are consistent with the modularity of perception as this influence precedes the modularist processing. The general idea is that attention changes the input. So it is not the case that beliefs influence perception while the sensory stimulation remains the same as the sensory stimulation does not remain the same as a result of changes in attention.

My main point is that the working of our perceptual systems depends on what aspect of our environment we are interested in. If our interest changes, our attention changes and the changes in our attention will, even according to the strictest modularist accounts, lead to changes in the functioning of the perceptual systems (again, even very early stages of perceptual processing, see Summerfield & de Lange, 2014, Summerfield & Egner, 2009, Teufel & Nanay, 2017).

When I am looking at my phone and I want to call a cab, I am interested in some very specific features of my phone and I will attend to these. When I am looking at the very same phone from the very same vantage point, under the very same lighting conditions, but I am desperately after something I can use as a hammer to drive a nail into the wall, I will attend to very different features of the phone. The perceptual processing is very different in these two cases.

So the output of these perceptual processes (even if we assume that they are beliefs, see above) will be very different perceptual beliefs. And these perceptual beliefs will very much depend on our interests in what I want to do with this phone (Nanay, 2006; 2021a). This is true even if we accept modularism in the mild form discussed above. In short, if we take perceptual beliefs to be the output of the perceptual system, the etiology of these beliefs will depend on a variety of mental processes

that are not part of the perceptual system. In other words, we cannot delineate those beliefs that are the output of the perceptual system from those that are not, because we could always orchestrate the workings of the non-perceptual processes that influence the perceptual processing in such a way that almost any given belief would count as the outcome of the thus influenced perceptual system.

A final worry about the proposal is that perceptual belief is the output of the perceptual system. We know that our perceptual systems are used very often without sensory input. That is what happens when we form mental imagery (Nanay, 2018a, 2021b, *In press*). Suppose that I close my eyes and you tell me that you put an apple in front of me on the desk. I form a belief about the apple. Then, you say that you moved the apple to the left just a couple of inches. I revise my belief about the apple. We know from empirical studies that we form beliefs of this kind on the basis of mental imagery, and we also know that the formation of mental imagery happens as a result of the offline use of our perceptual system (Nanay, 2020, 2022). So technically the belief that there is an apple in front of me would come out as a perceptual belief according to the etiological account as it is the output of the perceptual system. But this belief, which I formed on the basis of testimony is supposed to be a paradigmatic example of beliefs that are not perceptual beliefs.

5 | CONCLUSION: DOING WITHOUT PERCEPTUAL BELIEFS

I analyzed the four most widespread ways of characterizing perceptual beliefs and argued that none of them can give us a plausible way of distinguishing perceptual beliefs from other beliefs.

How should we revise the explanation of perceptual justification in the light of this? Perceptual states do justify beliefs. The perceptual state I am in right now likely justifies a lot of my beliefs about the laptop in front of me, the weather outside, and so on. But we do not need a distinctive category of perceptual belief in order to make sense of perceptual justification.

Theories of perceptual justification have focused too much on perceptual beliefs as the gateway from perception to belief. My aim was to shift the discussion of perceptual justification away from the problematic concept of perceptual belief and towards the more straightforward relation between perceptual states and beliefs (perceptual or non-perceptual). This way of thinking about justification would be consistent with coherentism, but it would also be consistent with the general idea of foundationalism – the idea that beliefs are justified by some epistemically basic mental states: perceptual states.

There are two ways in which such a foundationalist explanation of perceptual justification could go. The first one would replace the two-tier explanation (perceptual states → perceptual beliefs; perceptual beliefs → non-perceptual beliefs) with a one-tier explanation (perceptual states → beliefs). No need to postulate any perceptual beliefs here, but this explanatory scheme also somewhat under-specifies how perceptual justification works.

I want to end this paper by exploring a more specific explanatory scheme that is foundationalist in spirit but does not rely on any of the distinctions between perceptual and non-perceptual beliefs I argued against in this paper. I argued that there is no unproblematic way of keeping perceptual and non-perceptual beliefs apart, but it does not follow from this argument that we cannot make sense of beliefs being more or less perceptual. And as long as we allow for more or less perceptual beliefs, we can give a foundationalist explanation of perceptual justification.

This way of proceeding is structurally similar to a move in the metaphysics of natural properties. David Lewis famously argued that there is “an *adequate* theory of properties is one that recognizes an objective difference between natural and unnatural properties” (Lewis, 1983, p. 347, see also Lewis, 1984, 1986). Natural properties are “an élite minority of special properties” (Lewis, 1983, p. 346)

among the plebs of abundant properties. After decades of debates about various problems with various ways of drawing the distinction between this “an élite minority of special properties” and the rest, it has been argued that we should just give up on them while still allowing that there is an objective distinction between *more* natural and *less* natural properties (Hawthorne, 2006, p. 235, n. 24, Dorr & Hawthorne, 2013, but see also Nanay, 2014). Naturalness comes in degrees. Some properties are more natural than others. But there are no maximally natural properties – there is no distinction between “an élite minority of special properties” and the rest.

We can apply the very same strategy to the distinction between the “élite minority” of beliefs, namely, perceptual beliefs, and the rest of the beliefs while holding onto an objective distinction between *more* perceptual and *less* perceptual beliefs. The arguments I presented in the previous three sections aimed to establish that there is no unproblematic way of identifying the set of beliefs that would count as perceptual beliefs and keep these apart from the rest of the beliefs that would count as non-perceptual. But none of my arguments established that beliefs could not be *more* or *less* perceptual. Especially when it comes to the arguments in Section 3 (about justificatory approaches) and Section 4 (about etiological approaches), it was very much an open possibility that the perceptualness of beliefs comes in degrees.

But if beliefs can be more or less perceptual, then a broad foundationalist approach to perceptual justification is not restricted to the choice between the two-step model of justification I argued against (perceptual states → perceptual beliefs; perceptual beliefs → non-perceptual beliefs) and the one-tier explanation (perceptual states → beliefs), which is somewhat unspecific. A broadly foundationalist approach to perceptual justification could work with a multi-step model, whereby more perceptual beliefs justify less perceptual beliefs. This way of thinking about perceptual justification would preserve the spirit of the original foundationalist explanatory scheme but without relying on the problematic concept of perceptual belief.

In short, if my argument is correct, this is not a reason to reject foundationalism wholesale. But it is a reason to reject any version of foundationalism that takes perceptual beliefs to play a crucial role in understanding perceptual justification.⁹

REFERENCES

- Alston, W. (2005). *Beyond justification*. Cornell University Press.
- Ban, H., Yamamoto, H., Hanakawa, T., Urayama, S., Aso, T., Fukuyama, H., & Ejima, Y. (2013). Topographic representation of an occluded object and the effects of spatiotemporal context in human early visual areas. *Journal of Neuroscience*, 33, 16992–17007.
- Batty, C. (2010). Scents and sensibilia. *American Philosophical Quarterly*, 47, 103–118.
- Batty, C. (2011). Smelling lessons. *Philosophical Studies*, 153, 161–174.
- Berger, J., Nanay, B., & Quilty-Dunn, J. (2018). Unconscious perceptual justification. *Inquiry*, 61, 569–589.
- Block, N. (1983). Mental pictures and cognitive science. *Philosophical Review*, 92, 499–5411.
- Brandom, R. (1994). *Making it explicit*. Harvard University Press.
- Burge, T. (2010). *The origins of objectivity*. Oxford University Press.
- Chalmers, D. J. (2006). Perception and the fall from Eden. In T. Gendler & J. Hawthorne (Eds.), *Perceptual Experience* (pp. 49–125). Oxford University Press.

⁹This work was supported by the ERC Consolidator grant (726251), the FWF-FWO grant (G0E0218N), and the FWO research grant (G0C7416N), all for Bence Nanay. Special thanks for comments by Jack Lyons, Harmen Gijzen, Peter Graham, Santiago Echeverri, Brandon Ashby, Denis Buehler, Jacob Berger, Gerardo Viera, Nick Wiltsher, Peter Fazekas, Craig French, Lu Teng, Patrick Butlin, Margot Strohminger, Laura Gow, Kevin Wallbridge, Peter Brossel, Francesco Marchi, Filippo Contesi, Brad Saad, Kris Goffin, and Laura Silva. We presented an earlier version of this paper at Central European University and at the University of Nijmegen, and we are grateful for feedback from these audiences.

- Chen, J., Liu, B., Chen, B., & Fang, F. (2009). Time course of amodal completion in face perception. *Vision Research*, 49, 752–758.
- Chudnoff, E. (2015). Moral perception: High level perception or low level intuition? In T. Breyer & G. Gutland (Eds.), *Phenomenology of thinking*. Routledge.
- Clark, A. (2000). *A theory of sentience*. Clarendon Press.
- Crane, T. (2009). Is perception a propositional attitude? *The Philosophical Quarterly*, 59, 452–469.
- De Grave, D. D. J., Hesse, C., Brouwer, A.-M., & Franz, V. H. (2008). Fixation locations when grasping partly occluded objects. *Journal of Vision*, 8, 5–511. <https://doi.org/10.1167/8.7.5>
- Dorr, C., & Hawthorne, J. (2013). Naturalness. In K. Bennett & D. Zimmerman (Eds.), *Oxford studies in metaphysics* (Vol. 8, pp. 3–77). Oxford University Press.
- Dretske, F. I. (1981). *Knowledge and the Flow of Information*. MIT Press.
- Ehinger, B. V., Hausser, K., Ossandon, J. P., & Konig, P. (2017). Humans treat unreliable filled-in percepts as more real than veridical ones. *eLife*, 6, e21761. <https://doi.org/10.7554/eLife.21761>
- Evans, G. (1982). *The varieties of reference*. Oxford University Press.
- Fodor, J. A. (1983). *The Modularity of Mind*. The MIT Press.
- Gandhi, S. P., Heeger, D. J., & Boynton, G. M. (1999). Spatial attention affects brain activity in human primary visual cortex. *Proceedings of the National Academy of Sciences*, 96(1999), 3314–3319.
- Goodman, N. (1968). *The languages of art*. Hackett.
- Haugeland, J. (1981). Analog and Analog. In J. Biro & R. Shahan (Eds.), *Mind, brain and function* (Vol. 12, pp. 213–225). University of Oklahoma Press.
- Hawthorne, J. (2006). Quantity in Lewisian metaphysics. In *His metaphysical essays* (pp. 229–237). Clarendon Press.
- Hazenbergh, S. J., Jongmsa, M. L., Koning, A., & van Lier, R. (2014). Differential familiarity effects in amodal completion: Support from behavioral and electrophysiological measurements. *Journal of Experimental Psychology: Human Perception and Performance*, 40(2), 669–684.
- Hegd , J., Fang, F., Murray, S. O., & Kersten, D. (2008). Preferential responses to occluded objects in the human visual cortex. *Journal of Vision*, 8, 16–35.
- Helton, G., & Nanay, B. (2019). Amodal completion and knowledge. *Analysis*, 79, 415–423.
- Jackson, F. (1977). *Perception: A representative theory*. Cambridge University Press.
- Kok, P., Failing, M. F., & de Lange, F. P. (2014). Prior expectations evoke stimulus templates in the primary visual cortex. *Journal of Cognitive Neuroscience*, 26(7), 1546–1554.
- Kok, P., Jehee, J. F. M., & de Lange, F. P. (2012). Less is more: Expectation sharpens representations in the primary visual cortex. *Neuron*, 75(2), 265–270.
- Kulvicki, J. (2007). Perceptual content is vertically articulate. *American Philosophical Quarterly*, 44(4), 357–369.
- Kulvicki, J. (2014). *Images*. Routledge.
- Kulvicki, J. (2015). Analog representation and the parts principle. *Review of Philosophy and Psychology*, 6, 165–180.
- Lewis, D. (1971). Analog and Digital. *Nous*, 5, 321–327.
- Lewis, D. (1983). New work for a theory of universals. *Australasian Journal of Philosophy*, 61, 343–377.
- Lewis, D. (1984). Putnam's Paradox. *Australasian Journal of Philosophy*, 62, 221–236.
- Lewis, D. (1986). *On the plurality of worlds*. Blackwell.
- Lommertzen, J., Van Lier, R., & Meulenbroek, R. (2009). Grasping partly occluded objects: Effects of global stimulus information on action. *Perception*, 38, 200–214.
- Lupyan, G., Thompson-Schill, S. L., & Swingle, D. (2010). Conceptual penetration of visual processing. *Psychological Science*, 21(5), 682–691.
- Lycan, W. (2000). The slighting of smell. In N. Bhushan & S. Rosenfeld (Eds.), *Of minds and molecules: New philosophical perspectives on chemistry* (pp. 273–289). Oxford University Press.
- Lyons, J. (2009). *Perception and basic beliefs*. Oxford University Press.
- Lyons, J. C. (2005). Perceptual belief and nonexperiential looks. *Philosophical Perspectives*, 19, 237–256.
- Lyons, J. C. (2015). Unencapsulated modules and perceptual judgment. In J. Zeimbekis & A. Raftopoulos (Eds.), *The Cognitive penetrability of perception: New philosophical perspectives* (pp. 103–122). Oxford University Press.
- Mandelbaum, E. (2018). Seeing and conceptualizing. *Philosophy and Phenomenological Research*, 97, 267–283.
- Matthen, M. (2005). *Seeing, doing, knowing*. Oxford University Press.
- Matthen, M. (2010). On the diversity of auditory objects. *Review of Philosophy and Psychology*, 1, 63–89.
- McGrath, M. (2018). Looks and perceptual justification. *Philosophy and Phenomenological Research*, 96, 110–133.

- Millar, A. (2000). The Scope of Perceptual Knowledge. *Philosophy*, 75, 73–88.
- Murray, S. O., Kersten, D., Olshausen, B. A., Schrater, P., & Woods, D. L. (2002). Shape perception reduces activity in human primary visual cortex. *PNAS*, 99, 15164–15169.
- Nanay, B. (forthcoming a). The sensory individuals of picture perception. *Philosophical Studies*.
- Nanay, B. (forthcoming b). Amodal completion and relationalism. *Philosophical Studies*.
- Nanay, B. (2006). *Does what we want influence what we see? Proceedings of the 28th annual conference of the cognitive science society (CogSci 2006)* (pp. 615–621). Lawrence Erlbaum.
- Nanay, B. (2010). Perception and imagination: Amodal perception as mental imagery. *Philosophical Studies*, 150, 239–254.
- Nanay, B. (2013). *Between perception and action*. Oxford University Press.
- Nanay, B. (2014). Natural properties and bottomless determination. *American Philosophical Quarterly*, 51, 215–226.
- Nanay, B. (2018a). Multimodal mental imagery. *Cortex*, 105, 125–134.
- Nanay, B. (2018b). The importance of amodal completion in everyday perception. *i-Perception*, 9(4), 1–16. <https://doi.org/10.1177/204166951878887>
- Nanay, B. (2020). Multimodal mental imagery and naturalized epistemology. In D. Gatzia & B. Brogaard (Eds.), *The epistemology of nonvisual perception* (pp. 76–97). Oxford University Press.
- Nanay, B. (2021a). Perception is not all-purpose. *Synthese*, 198, 4069–4080.
- Nanay, B. (2021b). Unconscious mental imagery. *Philosophical Transactions of the Royal Society B*, 376 (1817), 20190689.
- Nanay, B. (2022). Entity realism about mental representations. *Erkenntnis*, 87, 75–91.
- Nanay, B. *Mental Imagery*. Oxford University Press. In press.
- Nudds, M. (2010). What are auditory objects? *Review of Philosophy and Psychology*, 1, 105–122.
- O'Callaghan, C. (2007). *Sounds*. Oxford University Press.
- O'Connor, D. H., Fukui, M. M., Pinsk, M. A., & Kastner, S. (2002). Attention modulates responses in the human lateral geniculate nucleus. *Nature Neuroscience*, 5(11), 1203–1209.
- Peacocke, C. (1986). Analogue Content. *Proceedings of the Aristotelian Society Supplementary*, 60, 1–17.
- Peacocke, C. (1989). Perceptual Content. In J. Almong, J. Perry, & H. Wettstein (Eds.), *Themes from Kaplan* (pp. 297–329). Oxford University Press.
- Peacocke, C. (2019). *The primacy of metaphysics*. Oxford University Press.
- Plomp, G., Nakatani, C., Bonnarde, V., & van Leeuwen, C. (2004). Amodal completion as reflected by gaze durations. *Perception*, 33, 1185–1200.
- Pryor, J. (2000). The skeptic and the dogmatist. *Noûs*, 34(4), 517–549.
- Pylshyn, Z. (1999). Is vision continuous with cognition? The case for cognitive impenetrability of visual perception. *Behavioral and Brain Sciences*, 22, 341–423.
- Quilty-Dunn, J. (2015). Believing in perceiving: Known illusions and the classical dual-component theory. *Pacific Philosophical Quarterly*, 96, 550–575.
- Schellenberg, S. (2010). Particularity and phenomenology of perceptual experience. *Philosophical Studies*, 149, 19–48.
- Siegel, S. (2010). Do visual experiences have contents? In B. Nanay (Ed.), *Perceiving the World* (pp. 333–368). Oxford University Press.
- Silins, N. (2008). Basic justification and the Moorean response to the skeptic. In T. Gendler & J. Hawthorne (Eds.), *Oxford studies in epistemology*, volume 2 (pp. 108–142). Oxford University Press.
- Sosa, E. (2013). Epistemic Agency. *Journal of Philosophy*, 110, 585–605.
- Soteriou, M. (2011). Occurrent perceptual knowledge. *Philosophical*, 21, 485–504.
- Summerfield, C., & de Lange, F. P. (2014). Expectation in perceptual decision making: Neural and computational mechanisms. *Nature Reviews Neuroscience*, 15, 745–756.
- Summerfield, C., & Egner, T. (2009). Expectation (and attention) in visual cognition. *Trends in Cognitive Sciences*, 13(9), 403–409.
- Teufel, C., & Nanay, B. (2017). How to (and how not to) think about top-down influences on perception. *Consciousness and Cognition*, 47, 17–25.
- Thompson, B. (2009). Senses for senses. *Australasian Journal of Philosophy*, 87, 99–117.
- Tye, M. (2007). Intentionalism and the problem of no common content. *Philosophical Perspectives*, 21, 495–541.
- Vrins, S., De Wit, T. C. J., & Van Lier, R. (2009). Bricks, butter, and slices of cucumber: Investigating semantic influences in amodal completion. *Perception*, 38, 17–29.

- Watanabe, M., Cheng, K., Murayama, Y., Ueno, K., Asamizuya, T., Tanaka, K., & Logothetis, N. (2011). Attention but not awareness modulates the BOLD signal in the human V1 during binocular suppression. *Science*, 334, 829–831.
- Young, B. D., & Nanay, B. (2022a). Olfactory amodal completion. *Pacific Philosophical Quarterly*, 103, 372–388.
- Young, N., & Nanay, B. (2022b). Audition and composite sensory individuals. In A. Mroczko-Wasowicz, & R. Grush (Eds.), *Sensory Individuals*. Oxford University. In print.

How to cite this article: Helton, G., & Nanay, B. (2022). Against the very idea of a perceptual belief. *Analytic Philosophy*, 00, 1–13. <https://doi.org/10.1111/phib.12277>