Phenomenology and the Cognitive Sciences
https://doi.org/10.1007/s11097-023-09915-0

Naïve realism, imagination and hallucination

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Accepted: 18 May 2023

Abstract
Naïve realists hold that the phenomenology of veridical perceptual experience is in part constituted by environmental objects that the subject is perceiving. Although naïve realism is well-motivated by considering the cognitive and epistemic roles of the phenomenology of veridical perceptual experience, it is considered difficult to explain hallucinatory and imaginative experiences. This paper provides three arguments to address these explanatory problems systematically on behalf of naïve realism. First, I argue that the imagination view of hallucination (IH), which states that hallucinations are involuntary sensory imagination, can be applied to total and neutrally matching hallucinations. Second, I argue for the conjunction of IH and the representational view of imagination (RI), according to which sensory imagination (including hallucination) is representational (shortly RIH). Third, I argue that naïve realism can coherently be integrated with RIH. I finally present an integrative model of perception, imagination and hallucination from the perspective of the combination of naïve realism and RIH.

Keywords Naïve realism · Hallucination · Imagination · Disjunctivism · Representationalism

1 Introduction: naïve realism

Keith Allen (2015) has recently argued that naïve realists should adopt *the imagination view of hallucination (IH)*, according to which hallucinations are *involuntary sensory imagination*. This paper aims to further develop the combination of naïve realism and IH by addressing some significant issues that Allen (2015) did not discuss. In the rest of this introductory section, I will briefly explain what naïve realism

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Published online: 06 June 2023

is, how it can be motivated, and how it has been criticized concerning imaginative and hallucinatory experiences.

Naïve realism is the view that the phenomenology of *veridical* visual perceptual experience is (at least partially) constituted by environmental objects with sensible properties that the subject is perceiving.[1] For instance, when I see a red apple in good viewing condition, I have a perceptual experience in which I am phenomenally aware of a red apple. According to naïve realism, the phenomenology of this experience is partially constituted by the red apple that the subject is seeing. Since naïve realism typically concerns *visual* perceptual experiences, I focus exclusively on experiences of the visual modality. Accordingly, "perception", "perceptual experience", "hallucination", "hallucinatory experience", "imagination", and "imaginative experience" should be read as of the visual modality.

Naïve realism can be motivated by theoretical considerations about cognitive and epistemic roles of the phenomenology of veridical perceptual experience.[2] For example, it has been argued that only naïve realism can provide a plausible account as to how a veridical perceptual experience enables us to form a demonstrative thought about an environmental object (Campbell, 2002; Raleigh, 2011). It has also been argued that naïve realism can provide the best account as to how a veridical perceptual experience enables us to gain knowledge about the external world (Johnston 2006, 2011; Logue 2012a). This paper assumes that naïve realism is well-motivated by these cognitive and epistemic considerations.[3]

Naïve realism, as just stated, does not say anything about *non-veridical* perceptual experiences like illusion and hallucination, though they are significantly similar in phenomenology to veridical perceptual experiences. However, naïve realists should not be silent on the nature of non-veridical perceptual experiences. If there is no good account of non-veridical experiences coherently integrated with naïve realism, we become unable to adequately explain non-veridical experiences *by adopting naïve realism*. This counts as a significant theoretical cost for naïve realism. Thus, naïve realists should argue that there is a good account of non-veridical experiences that fits coherently with naïve realism. For this reason, many naïve realists have attempted to explain non-veridical experiences (Brewer, 2011; Dokic and Martin 2012; Fish 2009; French, 2014; Genone, 2014; Ivanov, 2022; Kalderon, 2011; Logue 2012b, 2013; Martin 2004; 2006).

There is, however, a specific kind of non-veridical experience that supposedly poses an explanatory difficulty to naïve realism, namely *total and neurally matching*

[1] I owe this formulation of naïve realism to Soteriou (2016, 83). The following figures can be counted as naïve realists: Allen (2019); Beck (2019a, 2019b), Brewer (2011, 2017), Campbell (2002), French and Gomes (2019), Fish (2009), Ivanov (2022), Kennedy (2009, 2013; Logue (2012a), Martin (2002, 2004), Moran (2019, 2022) and Niikawa (2021). It is natural, though controversial, to interpret Johnston (2004, 2006) as a naïve realist. For a comprehensive review of naïve realism, see Genone (2016) and Fish (2021, Chap. 5).

[2] Some argue that naive realism best captures the phenomenology of veridical perceptual experience (e.g., Kennedy 2009; Fish, 2009, Sect. 1.3). I do not add this point to the list of motivations for naïve realism, for I do not regard it as persuasive. For a relevant discussion, see Sect. 4.

[3] Pautz (2010) presents a challenge to the cognitive and epistemic considerations in favor of naïve realism. Although I agree that naïve realists should respond to it, this paper does not deal with this challenge.

hallucination. Total hallucination is a kind of hallucination where the whole visual experience is hallucinatory. Neurally matching hallucination is a kind of hallucination where there could be a veridically perceiving subject whose brain states are identical to those of the hallucinating subject. If a hallucination is neurally matching, it is introspectively indiscriminable from a corresponding veridical perception. For convenience, I call total and neurally matching hallucination "perfect hallucination". Perfect hallucination is unlikely to occur in reality. However, given that perfect hallucination seems to be nomologically possible in that it does not conflict with the laws of nature, it serves as a touchstone to classify and evaluate the theories of visual phenomena. As I will discuss in detail in Sect. 5, naïve realism is considered to face a dilemma when explaining perfect hallucination; simply put, the dilemma is that naïve realists must explain the phenomenology of perfect hallucination either in positive terms (the phenomenology of perfect hallucination is X) or in negative terms (the phenomenology of perfect hallucination is not X), but the former faces the "screening off problem", and the latter cannot adequately capture the phenomenology of perfect hallucination.[4]

In addition to non-veridical perceptual experiences, imaginative experiences are also considered significantly similar in phenomenology to veridical perceptual experiences (Nanay 2016b; Liao and Gendler 2020, Sect. 2.3). As Nanay (2016b) argues, however, naïve realism may be unable to explain the phenomenology of imaginative experience in a way accommodating the close psychological and behavioral resemblance between perceptual and imaginative experiences (I will address Nanay's point in Sect. 7). If there is no good account of imaginative experience that is coherently integrated with naïve realism, again, we become unable to explain imaginative experiences by adopting naïve realism. Thus, naïve realists should show that some good account of imaginative experiences fits well with naïve realism.

Against this background, this paper develops the conjunctive position of IH and *the representationalist view of imagination (RI)* stating that imaginative experience is representational, and argues that naïve realism is compatible with this conjunctive position (shortly *RIH*). If my argument succeeds, it shows that naïve realists can provide a unified representationalist account of hallucinatory and imaginative experiences in a way compatible with naïve realism.[5] This provides strong theoretical support for naïve realism.

[4] Naïve realists might claim that they do not need to address perfect hallucination, arguing that it is nomologically impossible on the basis of a specific model of how our brain works. Alternatively, naïve realists might claim that no hallucination can be introspectively indiscriminable from veridical perception based on a specific conception of introspective indiscriminability. This paper does not discuss these lines of defense of naïve realism against the challenge from perfect hallucination.

[5] It's beyond the scope of this paper to argue that there is a good account of illusory experiences compatible with RIH and naïve realism. I think that Kalderon's (2011) and Genone's (2014) accounts of illusory experiences are particularly promising in combination with RIH and naïve realism, but showing this is the task for another paper.

2 The imagination view of hallucination

Let us start with the argument for IH. According to a traditional view of hallucination, hallucinations are *degenerate kinds of perceptions* in that hallucination is the same experiential kind as perception, but unlike perception, it does not present the surrounding environment to the experiencing subject (Bleuler 1934, 59; Macpherson 2013; Allen, 2015). IH is an alternative to the traditional view. Keith Allen, a prominent proponent of IH, claims that "hallucinations are degenerate kinds of specifically sensory imagination: that is, hallucinations are mental events of the same fundamental kind as those in which we employ mental imagery to imagine how something looks" (Allen, 2015, 288), where sensory imaginings are counted as "psychological events that differ fundamentally in kind" from perceptions (2015, 289). Hallucinations are "degenerated kinds" because "they are episodes of imagining over which subjects lack direct voluntary control" (2015, 287).[6]

Allen (2015, Sect. 3) persuasively argues that IH fits better with *actual cases* of hallucination, e.g., those caused by migraines, bright lights and hallucinogenic drugs. These types of hallucinations "often involve geometrical patterns, lines, and grids, with images often appearing to move with the eyes but retaining their relative positions in the visual field" (Allen, 2015, 291). Since these phenomenal features are typical of sensory imaginings rather than perceptions, such actual hallucinations can be plausibly explained in terms of sensory imagination.

Even though IH is plausible concerning various actual hallucinations, it does not mean that it also holds for *perfect hallucinations*. It may be that hallucination is not a single natural kind; it may cover various mental events differing in fundamental kind. Given this possibility, even though some actual cases of hallucination can be well explained in terms of involuntary sensory imagination, it is still far from clear whether perfect hallucinations can also be explained in the same manner. Moreover, given that perfect hallucinations are radically different in phenomenology from typical involuntary sensory imagination, the imagination view of perfect hallucination (IPH) may seem implausible. In order to defend IH in a general form, thus, its proponents need to argue for IPH.

In what follows, I argue that IPH is *not implausible*. The scope of this argument is modest because it aims to show that perfect hallucination *can* be reasonably counted as sensory imagination rather than that it *should* be counted as sensory imagination. Simply put, my point is that IPH is viable rather than that it is the best option.

My argument appeals to *the neural mechanisms for perception and sensory imagination*. By definition, perfect hallucination is realized by the same neural states as successful perception. If the neural mechanisms for perception are commonly used for sensory imagination, it is reasonable to think that the experiences generated through those neural mechanisms can be *either perceptual or imaginative*. This means that if an experience generated in that manner is not perceptual, it should be regarded as purely sensorily imaginative.[7] Thus, we need to address two questions

[6] Allen (2015, 294–96) provides a detailed argument showing that sensory imaginings can be involuntary.

[7] There are three notes here. First, I do not claim that perceptual and imaginative experiences are exclusive. Everyday perceptual experiences are likely to involve imaginative elements (Nanay, 2010). My

corresponding to the two if-clauses in order to examine whether perfect hallucinatory experiences are purely sensorily imaginative. First, are the neural mechanisms for perception commonly used for sensory imagination? Second, is a perfect hallucinatory experience, which is generated through the activation of the common neural mechanisms, not perceptual?

The first question is answered in the affirmative: many pieces of experimental research show that there are common visual representational mechanisms underlying sensory imagination and perception, including low and high-level visual areas (Pearson, 2019). It is widely known that there are common representational mechanisms for perception and sensory imagination in *the high-level visual area* (located in the ventral temporal lobe), which are considered as processing the conceptual content of visual scenery (Stokes et al., 2009; Reddy, Tsuchiya, and Serre 2010; Johnson & Johnson 2014). In addition to the representational commonality in the high-level visual area, it has recently been found that there are also common representational mechanisms *in the low-level visual area* (located in the occipital cortex), which are considered as processing the non-conceptual content of visual scenery. For instance, Page et al. demonstrate that "early visual processing stages are recruited and active during visualization" by means of measuring and comparing event-related potentials when visually imagining and seeing (2011, 146). By using multivariate pattern analysis of neural activity patterns in visual regions, Albers et al. (2013) find that the early visual areas (V1-V3) are used during both bottom-up stimulus processing and top-down internal generation of mental images.[8] This commonality of visual representational mechanisms offers *prima facie*, defeasible evidence that there is no essential difference in neural representational mechanism between perception and sensory imagination, unless shown otherwise.[9]

Another support comes from the *predictive processing theory of mind (PPT)*, which has recently attracted much attention. The key claim of PPT is that "the brain is a sophisticated hypothesis-testing mechanism, which is constantly involved in minimizing the error of its predictions of the sensory input it receives from the world" (Hohwy, 2013, 1). PPT is considered to be a promising framework for explaining various mental phenomena, such as perception, cognition and action (Hohwy, 2013). It is also applied to explaining emotion (Seth & Critchley, 2013), psychological disorders (Sterzer et al., 2018) and specific experiential states like self-consciousness (Wiese, 2019) and religious experiences (van Elk and Aleman 2017). Here I want to

point is that if a visual experience is not perceptual, it is purely sensorily imaginative. Second, I presuppose that veridical perceptual experiences are not the same phenomenological/metaphysical kind as purely imaginative experiences, given the naïve realist conception of veridical perceptual experience. Third, I assume here that the neural mechanisms in common between perception and imagination are not used for other types of mental activities that neither involve perception nor sensory imagination. It is fair to say that the burden of proof lies with those who deny this assumption.

[8] For other empirical support for the representational commonality in the low-level visual area, see Cichy et al. (2012), Naselaris et al. (2015) and Winlove et al. (2018). Winlove et al. (2018) also provide an evidence-based account as to why the early visual area has sometimes been regarded as inactive during sensory visual imaginings.

[9] Although Bartolomeo et al. (2020) have recently challenged this commonality of underlying neural mechanisms based on clinical research, Pearson (2020) provides a persuasive response to their challenge on behalf of the commonality in question.

emphasize that several advocates of PPT point out that perception and sensory imagination have the same underlying representational mechanism:

Probabilistic generative model based systems that can learn to visually perceive a cat (say) are, ipso facto, systems that can deploy a top-down cascade to bring about many of the activity patterns that would ensue in the visual presence of an actual cat. Such systems thus display […] *a deep duality of perception and imagination* (Clark, 2013, 198, emphasis added).

Perception and imagination are distinct phenomena, yet unified aspects of *the same underlying machinery for prediction error minimization* (Kirchhoff, 2018, 253, emphasis added).

In this way, PPT provides theoretical support for the commonality in neural mechanisms between perception and imagination.[10]

I have so far argued that the neural representational mechanisms are likely to be shared between perception and sensory imagination. Since a perfect hallucinatory experience is generated by the activation of the shared neural mechanisms, it should be purely sensorily imaginative if it is not perceptual. However, whether a perfect hallucinatory experience is perceptual or not depends on the metaphysical view of perceptual experiences. According to naïve realism, an experience is perceptual only if the experience is at least partly constituted by environmental objects that the subject perceives. According to some representationalist views, in contrast, an experience is perceptual if it represents-as-present a scene (Kriegel, 2015). While naïve realists consider a perfect hallucinatory experience not perceptual, such representationalists regard it as perceptual. Since it is beyond the scope of this paper to argue against such representationalist views in favour of naïve realism, I leave open whether perfect hallucinatory experiences *should* be regarded as perceptual or purely sensorily imaginative. I thus stop at the modest claim that perfect hallucinatory experiences *can* be reasonably regarded as sensorily imaginative.

I close this section by mentioning *the neural differences between typical sensory imagination and perception*. The commonality in neural representational mechanisms is compatible with other differences in neurally relevant features. Here I pick up two differences. First, typical sensory imagination and perception differ in the *activation level* of the common neural representational mechanisms, particularly in the early visual area. The activation level of the low-level visual representational mechanism in typical sensory imagination is much weaker than that in perception (Albers et al., 2013).

Second, typical sensory imagination and perception differ in *how the neural representational mechanisms are activated* (Nanay 2016b). In the case of perception, on the one hand, the activation of the visual representational mechanisms is mainly explained *in a bottom-up manner* in terms of sensory input from the surrounding environment. In the case of typical sensory imagination, on the other hand, the acti-

[10] As Kirchhoff and Kiverstein (2019) persuasively argue, PPT can coherently be combined with externalist views of phenomenal consciousness including naïve realism defended in this paper. They claim: "The diachronic constitution of phenomenal consciousness through predictive processing entails the ongoing dynamic entanglement of the agent and its wider cultural environment" (Kirchhoff and Kiverstein, 2019, 117). Although it is beyond the scope of this paper to discuss how naïve realism can be integrated with PPT in detail, it is at least fair to say that naïve realism is not necessarily incompatible with PPT.

vation of the visual representational mechanisms is mainly explained *in a top-down manner* in terms of the feedback input from the higher cognitive mechanisms.[11] This is not to say that perception is caused without any influence from higher cognitive mechanisms, nor that typical sensory imagination is caused without any influence from sensory input. In the former case, higher cognitive mechanisms are likely to serve as a background condition contributing to the phenomenology of perception (Finley, 2022); in the latter case, sensory input may serve as a background condition contributing to the phenomenology of typical sensory imagination. The point is that perception is causally triggered by the sensory input from the surrounding environment, while typical sensory imagination is causally triggered by the feedback input from the higher cognitive mechanisms. [12]

3 The representationalist view of imagination

RI states that an imaginative experience represents sensible properties such as redness and squareness in such a way that those properties constitute its phenomenology.[13] This section defends RIH by arguing that it can coherently and systematically explain the phenomenology of *both typical sensory imagination and perfect hallucination*. Let us first clarify the *explanandum*.

Suppose that a subject has a perfect hallucinatory experience as of a red apple. The hallucinatory experience makes the subject inclined to believe that there is a red apple before her (perceptual belief) and that she perceives a red apple (introspective belief). In addition, the hallucinatory experience is introspectively indiscriminable from a corresponding veridical perceptual experience. RIH needs to explain the cognitive and epistemic features of perfect hallucinations in representational terms.

There is another explanatory requirement that RI must satisfy. Even if a typical visual image of a red apple comes into a subject's mind involuntarily, the subject is not inclined to believe that there is a red apple before her and that she perceives a red apple. Furthermore, the imaginative experience is introspectively *discriminable* from a typical perceptual experience of a red apple. RI must be able to explain why a typical involuntary imaginative experience does not incline the subject to form the relevant perceptual and introspective beliefs and why it is introspectively *discriminable* from a typical perceptual experience.

Summarizing this, RIH must simultaneously satisfy the following two explanatory requirements. First, RIH must be able to explain why a perfect hallucinatory

[11] This account can accommodate a case in which a subject visually imagines an object while opening her eyes and thereby receiving input from the surrounding environment. My point is that if we compare this case with a case in which the subject does not visually imagine anything while opening her eyes as in the first case, we must explain the difference in neural activities between the two cases in terms of top-down input from higher cognitive mechanisms.

[12] Note that the presence of neural differences between typical sensory imagination and perception does not conflict with the possibility of perfect hallucination. For the whole picture of how perception, typical sensory imagination and perfect hallucination can be modelled intagratively, see Sect. 6.

[13] Since this paper concerns the experiential aspects of perception, imagination and hallucination, I do not discuss unconscious imagination.

experience makes its subject inclined to form certain perceptual and introspective beliefs and why it is introspectively indiscriminable from a corresponding veridical perceptual experience. Second, RIH must be able to explain why, unlike cases of perfect hallucination, a *typical* involuntary imaginative experience does not incline the subject to form such perceptual and introspective beliefs and why it is introspectively discriminable from a typical perceptual experience.

As a preparatory step to address the first explanatory requirement, I first discuss how RI can explain the phenomenal similarity between perception and imagination. One promising explanation is to appeal to the phenomenal awareness of *common sensible properties*, such as redness and squareness (Nanay 2015, 2016b; Kriegel 2015). In visually perceiving a red apple, for example, I am aware of the redness and the apple-shapedness instantiated in the *real* red apple.[14] In visually imagining a red apple, likewise, I am aware of the redness and apple-shapedness represented in the imaginative experience. Because of this commonality, the perceptual experience is phenomenally similar to the imaginative experience.

Advocates of RIH can apply this idea to the extreme case in which an imaginative experience is introspectively indiscriminable from a perceptual experience–that is, to the case of perfect hallucinations. In having a perfect hallucinatory experience of a red apple, for example, the imaginative experience represents every sensible property I would be aware of *if I perceived a red apple of the same kind*. Hence, when I have a perfect hallucinatory experience of a red apple, I am aware of every sensible property of which I would be aware if I perceived a red apple of the same kind. Because of this perfect commonality in *property awareness*, a perfect hallucinatory experience can be introspectively indiscriminable from a corresponding perceptual experience. This introspective indiscriminability can explain why a perfect hallucinatory experience makes its subject inclined to form perceptual and introspective judgments, which the subject would form if the subject had a corresponding veridical perceptual experience.

How about the second explanatory requirement? There are many ways for RI to explain the *introspectable phenomenal difference* between typical imagination and perception. One idea is to think that the introspectable phenomenal difference between typical imagination and perception consists in the fact that, while a typical imaginative experience represents *indeterminate* sensible properties, a veridical perceptual experience enables its subject to be aware of *determinate* sensible properties. For example, when a red apple involuntarily pops into my mind as being on my desk, the imaginative experience may represent certain *indeterminate* sensible properties, such as redness with no more determinate shade, unspecified apple-like-shape and a determinable spatial property "being *around* here". In contrast, when I perceive a red apple on my desk, I am perceptually aware of *determinate* sensible properties, such as a specific shade of redness, a specific shape of the apple and a determinate spatial property of "being here". This difference in the determinacy of property awareness

[14] This description of property-awareness is meant to be neutral regarding any metaphysical theory of perception, such as naïve realism and representationalism. While naïve realism explains the awareness of sensible properties in terms of perceptual/acquaintance relation with the worldly instances of those properties, representationalism explains it in terms of representation of those properties.

may account for the introspectable phenomenal difference between the imaginative experience and the perceptual experience; the lack of determinacy may explain why the imaginative experience does not incline me to form a perceptual belief that there is an apple on my desk and an introspective belief that I perceive a red apple on my desk. Since the sensible properties of which I am aware in having the imaginative experience are very indeterminate, it does not seem to me that there exists an apple instantiating those sensible properties and that I perceive an apple instantiating those sensible properties. This would be partly because we implicitly know that when we perceive a real, existent apple in a good viewing condition, the perceptual experience usually presents it as having very determinate properties.

Another idea is to appeal to *the types of represented properties*. Typical imaginative experiences may represent *much fewer kinds of sensible properties* than perceptual experiences can. For instance, when I naturally imagine an apple, it seems only to represent its shape, colour and size. In contrast, when I perceive an apple, I may be aware of other kinds of properties, such as its texture and atmosphere. At the very least, while I can roughly imagine an apple as having only such limited kinds of sensible properties, it does not seem that I can perceive an apple in such a way; I cannot help but perceive it as having a specific texture, atmosphere and other properties. This difference may account for the introspective phenomenal difference between typical imaginative experiences and perceptual experiences. As the difference in determinacy does, this poverty of the kinds of represented properties may also explain why imaginative experiences do not incline us to form perceptual and introspective beliefs. Arguably, we implicitly know that when we perceive a real apple in a good viewing condition, the perceptual experience usually presents it as having many kinds of sensible properties, including its texture and atmosphere.

Finally, RI may be able to appeal to *a feeling of presence/existence*. When I perceive a red apple, for example, the perceptual experience may present a red apple with a feeling of presence/existence. Likewise, a perfect hallucinatory experience may misleadingly represent a red apple with a feeling of presence/existence. In contrast, I do not experience any feeling of presence/existence in imagining an apple in everyday situations. The presence or absence of existential feelings may account for the introspective phenomenal difference between typical imaginative experiences and perceptual experiences; the lack of such existential feelings may explain why imaginative experiences do not incline us to form perceptual and introspective beliefs.[15]

Depending on what type of imaginative experience to target, the appropriate strategy may change. Furthermore, the three strategies are not exclusive; they can be combined if needed. For instance, when an imaginative experience represents an apple as having only indeterminate sensible properties without involving any feeling of presence/existence, the combination of the first and third strategies may best explain why it is introspectively discriminable from a typical perceptual experience of an apple. Given that the three strategies and their possible combinations are avail-

[15] I do not claim that existential feelings can be experienced without any contribution from higher cognitive mechanisms. Perhaps, visual neural mechanisms can represent an object with a feeling of presence/existence only if higher cognitive mechanisms contribute to the generation of that representation. As Dokic and Martin (2012) argues, for example, metacognitive systems may play a key role.

able to explain why typical imaginative experiences are introspectively discriminable from perceptual experiences, we can reasonably conclude that RI can satisfy the second explanatory requirement.

The three strategies are all compatible with the above explanation of why perfect hallucination is introspectively indiscriminable from veridical perception, which appeals to the perfect commonality in property awareness. The general idea underlying those strategies is that the property awareness in imaginative experiences *can* be less rich than in typical perceptual experiences. However, it does not necessarily lead to the claim that *the nature of imaginative experiences consists in the poverty of property awareness*. It is open to the possibility that an imaginative experience can enable us to be aware of as rich sensible properties and existential feelings as a typical perceptual experience. Simply put, if an imaginative experience makes us aware of less rich sensible properties and existential feelings than a corresponding perceptual experience, they are introspectively discriminable. Conversely, if it makes us aware of as rich sensible properties and existential feelings as a corresponding perceptual experience, they are introspectively indiscriminable. In this way, RIH can simultaneously satisfy the two explanatory requirements in question.

4 The compatibility between naïve realism and RIH: introspective indiscriminability

The previous section has argued that RIH is explanatorily satisfactory. Opponents of naïve realism may accept this, yet object that *it is incompatible with naïve realism*. There are two distinct objections here. I address the first objection in this section and the second one in the next section.

The first objection is as follows. Naïve realism states that a perceptual experience is *relational* in that it is partly constituted by environmental objects that stand in perceptual relation with the experiencing subject. In contrast, RI states that imaginative experiences are representational, and IH implies that imaginative experiences can be introspectively indiscriminable from perceptual experiences. However, it is implausible to think that a *relational* experience is introspectively indiscriminable from a *representational* experience. Therefore, naïve realists cannot adopt RIH.

Naïve realists can make a two-step response to this objection. The first step is to reject the premise that a relational experience cannot be introspectively indiscriminable from a representational experience. This premise is indeed question-begging for naïve realists. Naïve realists typically claim that veridical perception differs in metaphysical nature from perfect hallucination.[16] This implies that even though two kinds of visual experiences (such as perceptual and hallucinatory experiences) differ in metaphysical nature, they can be introspectively indiscriminable.

Aside from this naïve realist commitment, the premise is doubtful in itself. Thomas Raleigh argues that "visual phenomenology in itself is neutral between the various competing theories–sense data, intentionalism, naïve realism" (2009, 77). According

[16] A few naïve realists accept that veridical perception and perfect hallucination do not differ in metaphysical nature, claiming that hallucinations are also *relational* experiences. See Raleigh (2014) and Ali (2018).

to Raleigh, the fact that the phenomenology of a perceptual experience is as it actually is does not decide which theory of perceptual experience is true. Each theory does not differ in predictions about perceptual phenomenology *on the introspectively detectable level*. Otherwise, all a philosopher has to do to grasp the metaphysical nature of perceptual phenomenology is to carefully introspect on her own perceptual experiences. If this were the case, there would be no dispute over the metaphysical nature of visual perceptual phenomenology. However, such disputes exist in reality.

Naïve realism is often considered to provide the best explanation for the phenomenology of veridical perceptual experiences (Kennedy, 2009; Fish, 2009, Sect. 1.3). Even if this is true, however, it does not mean that only naïve realism can provide a correct prediction about perceptual phenomenology on the introspectively detectable level. For the sake of argument, suppose that only naïve realism can adequately explain the *transparency* of perceptual experience: it seems that in having a perceptual experience, we are directly aware of external objects with visible properties, not of the experience itself. However, this does not mean that other theories provide incorrect predictions about perceptual phenomenology on the introspectively detectable level. They would also predict that the phenomenology of perceptual experience is as it actually is, for which the transparency thesis holds. What they deny is, rather, that the transparency thesis should be respected; they would insist that it should be explained away as a naïve illusion.

This consideration suggests that the metaphysical nature of perceptual experience is not reflected in perceptual phenomenology on the introspectively detectable level. Given this, even though two experiences differ in metaphysical nature, namely one relational and another representational, this does not provide any reason to think that they cannot be introspectively indiscriminable.

The second step of the naïve realist response is to positively explain why representational experiences can be introspectively indiscriminable from relational experiences *in terms of property awareness*. Naïve realism implies that the phenomenology of two perceptual experiences differs if their constituents are different. However, they can accept that the phenomenology of two perceptual experiences does not differ on an introspectively detectable level *if property constituents are identical*. For example, let us consider qualitatively identical twins (T1 and T2). When a subject sees T1 and T2 in turn in an identical viewing condition and thereby has two perceptual experiences, they have distinct phenomenology because their object constituents are distinct, namely T1 and T2. Nevertheless, they are introspectively indiscriminable because their property constituents are identical: the subject is phenomenally aware of the same sensible properties in having the two experiences of T1 and T2.

In the same manner, naïve realists can explain why representational experiences can be introspectively indiscriminable from relational experiences. According to the combination of naïve realism and RIH, we are phenomenally aware of sensible properties in having a perceptual experience and an imaginative experience. While the property awareness in the perceptual experience is explained in relational terms, the one in the imaginative experience is explained in representational terms. Although this metaphysical difference matters for the phenomenological kind, it is not reflected in the introspectively detectable features. It is the commonality in property awareness

that accounts for the introspective indiscriminability between these representational and relational experiences.

Note that this does not mean that naïve realists are committed to the view that the phenomenology of *relational* experiences is the same as the phenomenology of *representational* experiences. According to the naïve realist conception of visual phenomenology, the fact that a visual experience is introspectively indiscriminable from another visual experience does not entail that they have the same phenomenology (Beck, 2019a). The relational phenomenology of veridical perceptual experiences involves environmental objects as their constituents. The cognitive and epistemic motivations for naïve realism mentioned in Sect. 1 are partly based on the object components of the relational phenomenology of veridical perceptual experience, which the phenomenology of representational experiences lacks.

5 The compatibility between naïve realism and RIH: the screening off problem

This section discusses how naïve realists can address the second objection to the compatibility between naïve realism and RIH, namely the screening off objection. Mike Martin (2004) presents an argument against positive disjunctivism, which covers the combination of naïve realism and RIH. The argument is as follows: Let us assume that naïve realists adopt RIH, according to which perfect hallucinatory experiences has representational imaginative phenomenology. Because there is no external cause of a perfect hallucination that *can constitutively contribute to its phenomenology* (a perfect hallucination can, in principle, occur even without any external cause, i.e., purely by means of the brain's abnormal spontaneous activities), the representational imaginative phenomenology of perfect hallucination supervenes on the neural states/activities of the hallucinating subject. It follows from this that the corresponding *perceiving* subject also undergoes the same representational imaginative phenomenology. Since it is introspectively indiscriminable from the relational perceptual phenomenology of the corresponding sort, the visual elements in the perceiving subject's conscious field are exhaustively explained in terms of the *representational* imaginative phenomenology. This means that *relational* perceptual phenomenology is explanatorily redundant or *screened off*.[17] If relational perceptual phenomenology is explanatorily screened off in this way, then naïve realism collapses. Hence, naïve realists should not adopt RIH.

Given this argument, Martin (2004; 2006) claims that naïve realists must explain the phenomenology of perfect hallucination in negative epistemic terms, namely

[17] Here one may point to the possibility that the visual elements in the perceiving subject's phenomenal consciousness are overdetermined; that is, the possibility that they are overdetermined by relational perceptual phenomenology and representational imaginative phenomenology. I suspect, however, that this sort of overdetermination (phenomenal overdetermination) is incoherent. Must the notion of *phenomenology* be such that if a subject is undergoing two *distinct kinds* of phenomenology, then necessarily, if either kind of phenomenology disappears, the subject can become aware of the loss? The phenomenal overdetermination conflicts with this conceptual requirement. Even if the phenomenal overdetermination is coherent, it would at least be ad hoc. For a relevant discussion, see Pautz (2010, 298–99).

being introspectively indiscriminable from the phenomenology of veridical perception. However, many objections have been presented to Martin's negative epistemic view of perfect hallucinations (Conduct, 2010; Hawthorne & Kovakovich, 2006; Robinson, 2013; Zimmerman, 2012). If naïve realists must adopt Martin's view of perfect hallucinations, it counts as a significant theoretical cost for naïve realists.

Recently, however, some naïve realists have attempted to argue against Martin's screening off argument (Allen, 2015; Moran, 2019, 2022; Ivanov 2022). They emphasize that the screening off argument relies on *the local supervenience principle*, which claims that the phenomenology of perfect hallucination supervenes solely on the subject's neural states/activities. By denying this principle, naïve realists can avoid the screening off problem. However, it seems undeniable that the phenomenology of perfect hallucination is entirely determined by the subject's neural states/activities, because there seems to be no factor apart from the subject's neural states/activities that directly contribute to it. How can naïve realists deny the local supervenience principle, while holding onto the plausible idea that the phenomenology of perfect hallucination is entirely determined by the subject's neural states/activities?

Allen (2015, 300) suggests that a *negative* condition is necessary for the occurrence of hallucinatory experiences, that is, *the absence of the appropriate object that is perceptually related to the subject*.[18] To see his point, take a perfect hallucination of an apple for example. Allen's idea is that a perfect hallucinatory experience of an apple is generated by certain neural states/activities, but only with the negative condition that no actual apple is causally connected to the neural states/activities in a perceptually appropriate manner. Simply put, a perfect hallucinatory experience of an apple is generated by certain neural states/activities only when the subject does not successfully perceive an actual apple. By adopting this idea, naïve realists can *simultaneously* deny the local supervenience principle and preserve the idea that the phenomenology of perfect hallucination is entirely determined by the subject's neural states/activities. The phenomenology of perfect hallucination does not supervene only on the subject's neural states/activities, because if the negative condition does not hold—if the subject successfully perceives an actual apple—, the occurring visual experience is not counted as hallucinatory in the first place. On the other hand, if the negative condition holds and the occurring visual experience is counted as hallucinatory, its phenomenology is entirely determined by the subject's neural states/activities. The negative supervenience base does not positively contribute to the phenomenology of hallucinatory experiences; rather, it can at best prevent it *from being constituted by environmental objects.*

Moran (2019) also presents an argument of the same kind against the local supervenience thesis. In doing so, Moran emphasizes:

[The argument against the local supervenience thesis] does not force naive realists to say anything regarding the psychological nature of hallucinatory experience. A related advantage is that naive realists are then able to put forward whatever theory of hallucinatory experience best captures the distinctive natures of these episodes. (Moran, 2019, 12)

[18] Here I charitably interpret Allen's argument in such a way that it can cover veridical hallucinations. For an uncharitable interpretation of Allen's argument, see Moran (2019, 7).

If this is correct, naïve realists are free to adopt RIH without worrying about the screening off problem.

However, as I will argue, this is not the case. The denial of the local supervenience thesis imposes at least two restrictions on the scope of theories of perfect hallucination available to naïve realists. First, naïve realists cannot adopt a theory of perfect hallucination *implying* that a perfect hallucinatory experience supervenes only on the subject's neural states/activities. For example, naïve realists cannot adopt an identity theory of perfect hallucination stating that a perfect hallucinatory experience is identical to a certain kind of neural state. Second, more importantly, a theory of perfect hallucination that naïve realists adopt should be able to *explain* why a visual experience, which a perfectly hallucinating subject undergoes, cannot occur when a corresponding environmental scene is causally connected to the subject's neural states/activities in a perceptually appropriate manner.

Given this second explanatory requirement, RIH needs to explain why *a representational imaginative experience*, with which RIH identifies a perfect hallucinatory experience as of an environmental scene, occurs only with the condition that the subject does not see an environmental scene of the same kind. This is not a trivial task, since it is unclear why it is impossible for us to visually imagine an object while seeing the same kind of object. As Ivanov (2022) emphasized, it is unclear why it is impossible for us to simultaneously have imaginative and perceptual experiences of an object of the same kind, e.g., an apple. Because of this unclarity, advocates of the combination of naïve realism and RIH are required to explain why it is impossible for us to simultaneously have imaginative and perceptual experiences of an environmental scene of the same kind.

That said, RIH has the resource to explain why a visual imaginative experience of a scene ontologically depends on the condition that the subject does not perceive a scene of the same kind. The explanation is derived from a phenomenological consideration of sensory imagination.

Suppose that you are seeing a desk which has nothing on it. Undoubtedly, it is possible to visually imagine a red apple as being on a desk. This suggests that we can visually imagine an object where nothing is present. Suppose next that you are seeing a desk on which there is your laptop. It seems a bit more difficult but still possible to visually imagine a red apple as being located in the very position where the laptop is present in reality. This suggests that we can visually imagine a specific object even where something different is perceptually present. Finally, suppose that you are seeing an apple on a desk. Does it seem possible to visually imagine the (qualitatively) same apple in the same position? It seems almost impossible to generate suitable visual imagery. I engaged in many trials of this task, but I did not think I could succeed even once. It may be more appropriate to say that *I have no idea of what I should do* if I am asked to visually imagine the same scene as I am perceiving in reality. Whatever I do in trying to visually imagine the same scene as that I am actually seeing, it does not seem that I can undergo the imaginative phenomenology typically associated with visually imagining the scene where I do not perceive

the scene.[19] As Wittgenstein remarked, "While I am looking at an object I cannot imagine it" (Wittgenstein, 1970, § 621). If this consideration is correct, we gain the phenomenological data that *when we are seeing a scene, we cannot visually imagine the (qualitatively) same scene at the same time*. I call this the "perceptual limitation to sensory imagination".[20]

The perceptual limitation to sensory imagination accounts for why an imaginative experience, with which RIH identifies a perfect hallucinatory experience as of an environmental scene, occurs only with the condition that the subject does not see an environmental scene of the same kind. The reason such an imaginative experience occurs only when this condition is met is that when we see a scene, we cannot visually imagine the (qualitatively) same scene in the same way at the same time. Thus, we can conclude that RIH can reasonably explain why the occurrence of perfect hallucinatory experiences supervenes partly on the negative condition that the subject does not perceive a corresponding environmental scene. The naïve realism and RIH combination can satisfy the explanatory requirement in question.

6 The whole picture

I have argued that naïve realism is compatible with RIH in the last two sections. This section briefly sketches an integrative model of perception, imagination and hallucination from the perspective of the combination of naïve realism and RIH.

Perception and imagination share the same visual representational mechanisms. They contribute to phenomenal consciousness *differently depending on the causal basis.* In the case where their activation is appropriately caused in a bottom-up manner by sensory input from an environmental object, the environmental object becomes a constituent of perceptual consciousness, and the subject thereby becomes able to control her cognitive states and behaviours regarding the environmental object appropriately. In this "perception" case, *the visual representational mechanisms make the environmental object with sensible properties a constituent of perceptual consciousness, enabling the subject to be phenomenally aware of the sensible properties instantiated in the environmental object*.[21]

[19] When you are asked to visually imagine the same apple as you are perceiving in reality, you might engage in two-step imagining: (1) to visually imagine the situation in which the apple is absent; and then (2) to visually imagine the apple there. I am not sure this is really feasible. More importantly, the phenomenology of this two-step imagining is very different from the phenomenology of the one-step imagining that we usually do when we are asked to visually imagine an apple where there is no apple before us. This suggests that the two-step imagining includes something like *conceiving* or *thinking* in either step. If this analysis is correct, the two-step imagining is not purely sensory imagination, but a mixed imaginative-cognitive activity. For this reason, I set aside the possibility of this two-step imagining. Alternatively, it would be possible to *propositionally imagine* that the apple is not perceptual but imaginative. But this type of imagining is not sensory imagination.

[20] This consideration concerns a *voluntary* visual sensory imagination rather than *involuntary* one. I assume that the perceptual limitation to voluntary sensory imagination can also apply to involuntary sensory imagination.

[21] This idea is a version of naïve realist *selective* accounts of the brain's role for having a perceptual experience: our brain enables us to be selectively aware of an environmental item rather than producing

By contrast, when the activation of the mechanisms is causally triggered in an appropriate top-down fashion, visual representational imagery is produced in such a way that the subject can consciously organize and direct our cognitive activities by using it. In this "good imagination" case, *the visual representational mechanisms provide visual imagery to phenomenal consciousness, representing relatively poor sensible properties*.

What is important is that there is also a "bad imagination" case in which the activation of the mechanisms is inappropriately caused without any sensory input from appropriate environmental objects, e.g., by a direct brain stimulation as portrayed in the film "*the Matrix*" or the brain's abnormal spontaneous activities. In this case, visual imagery is produced in such a way that the subject cannot voluntarily control it and by which the subject can sometimes be cognitively and epistemically misled. This bad imagination counts as a hallucination; a perfect hallucination is an extreme case of this sort: *the visual representational mechanisms produce extremely rich visual imagery, representing every sensible property of which I would be aware if I perceived a scene of the same kind*.

The causal basis of visual processing accounts for the difference in phenomenological kinds between perceptual and imaginative experiences, namely relational phenomenology and representational phenomenology. When it is appropriately caused by sensory input from the ecologically coupled environmental objects, the accompanying visual experience involves those environmental objects as constituents of its phenomenology. In contrast, when it is causally triggered by something different from sensory input from appropriate environmental objects (regardless of whether it is appropriate top-down input, direct brain stimulation, or abnormal spontaneous brain activities), the accompanying visual experience represents sensible properties contributing to its phenomenology.

7 Conclusion

Closing this paper, it is worth emphasizing that there are five theoretical virtues of RIH. First, RIH neither necessarily conflicts with nor entails Johnston's and Conduct's views of hallucination, according to which, in having a hallucinatory experience, we are aware of uninstantiated sensible properties (Johnston, 2004; Conduct, 2012). We may be able to reconcile RIH with Johnston's and Conduct's views of hallucination by interpreting them as an account of involuntary sensory imagination. That is to say, it seems possible to think that, in visually imagining an object with visible properties, we are aware of uninstantiated visible properties. However, if it turns out that Johnston's and Conduct's views face insurmountable difficulties, the proponents of RIH can part ways with them.

Second, RIH can allow a perfect hallucinatory experience *without* any external cause, such as direct brain stimulations. In this respect, RIH is superior to Raleigh's relationalist view of hallucination, according to which the phenomenology of hallucination is constituted by *certain appearance properties* of the external cause of

something of which we are aware (Fish, 2009, Chap. 5; Ivanov 2022).

hallucination (Raleigh 2014). Raleigh's view cannot accommodate the case in which hallucinations occur without any external cause.

Third, RIH fits better with our intuitions than eliminativism regarding the phenomenal character of hallucinations (Fish, 2009; Logue 2012b). To say that a perfect hallucination has imaginative phenomenology is much more intuitive than saying it lacks any visual phenomenology. The same can be applied to Marin's negative epistemic view, because it is counterintuitive that there is no positive explanation of why perfect hallucination is introspectively indiscriminable from veridical perception.

Fourth, RIH is explanatorily superior to *standard positive representationalist disjunctivism*, which states that a hallucinatory experience represents sensible properties in such a way that those properties constitute its phenomenology, for the following two reasons. First, the standard positive disjunctivist view cannot present any integrative picture covering not only perceptual and hallucinatory but also imaginative experiences, because it does not state anything positive about imaginative experiences. In contrast, RIH provides such an integrative picture. Second, the standard positive representationalist disjunctivist view cannot appeal to the perceptual limitation to sensory imagination to explain why a representational experience occurs only with the condition that the subject does not appropriately perceive an environmental object of the relevant kind, since, unlike RIH, it does not regard hallucinatory experiences as imaginative.

Fifth, RI seems superior to the dependency thesis of sensory imagination, according to which "visualizing x consists of representing the seeing of x" (Nanay 2016a, 74). Nanay (2016a, 2016b) argues against the dependency thesis in that it cannot explain why eye movements in perception significantly resemble those in sensory imagination; there are other objections to the dependency thesis (Gregory, 2009; Noordhof, 2002). Nanay assumes that naïve realists cannot adopt RI and instead need to take the dependency thesis; given this assumption, he assesses naïve realism negatively. However, as I have argued, if naïve realism can coherently adopt RI, those difficulties of the dependency thesis become irrelevant to the viability of naïve realism.

Given the five theoretical advantages, it is fair to conclude that the combination of naïve realism and RIH is not only coherent but also very attractive. Allen (2015), Moran (2019, 2022) and Ivanov (2022) have persuasively argued that naïve realists can coherently provide a positive explanation for the phenomenology of perfect hallucinations. However, there are few naïve realist attempts to concretely explain the metaphysical nature of hallucinations and imaginations in an integrative manner. Thus, this paper provides an original and significant contribution to the debates over the nature of visual phenomena in relation to naïve realism.

Acknowledgements I would like to thank Alberto Voltolini, Andrea Tortoreto, Assaf Weksler, Elvira Di Bona, Fabrizio Calzavarinis, Géraldine Carranante, Giulia Martina, Gu Zhiwei, Ivan Ivanov, Jennifer Corns, Jørgen Dyrstad, Katsunori Miyahara, Keith Wilson, Paweł Zięba, Richard Stone, Rob Hoveman, Thomas Park, Uriah Kriegel, Yasushi Ogusa, and members of POPS research group for their comments on written versions of this paper. I would also like to thank audiences at the University of Glasgow, the University of Edinburgh, the University of Turin, and Institut Jean Nicod for their comments on related talks. I gratefully acknowledge the support of the Japan Society for the Promotion of Science.

Funding Open access funding provided by Kobe University. This work is supported by JSPS KAKENHI Grant Number 20K00001, 21K00011 and 22K19819.

Declarations

Conflict of interest None.

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