

IX—UNMISTAKEN: IMAGINATIVE PERCEPTION AND ILLUSION

ADRIAN J. T. ALSMITH

Sometimes what we perceive appears other than it is. The term ‘illusion’ is often used to capture the broad variety of cases in which this occurs. But some of these cases are better described as cases of imaginative perception—cases in which what we perceive appears as we imagine it to be. I argue that imaginative perception is to be sharply contrasted with illusions variously conceived as cases of misleading appearance and cases of perceptual error. By removing the blanket term ‘illusion’ from our description of such cases, we can better see the underlying complex of cognitive processes they involve.

I

A generic conception of illusion has little value in theoretical discussions of perception. There is a great deal of heterogeneity in the ways in which something can perceptually appear other than it is. It would be a mistake to assume any deep psychological similarity between these cases simply in virtue of fitting this description. These are all lessons that [Austin \(1962\)](#) tried to teach. But Austin does not seem to have been sufficiently persuasive. The spectre of a generic conception of illusion continues to haunt the literature, a common expression of which is that a case of illusion is ‘any perceptual situation in which a physical object is actually perceived, but in which that object perceptually appears other than it really is, for whatever reason’ ([Smith 2002](#), p. 23).¹ I will argue here that there is an important psychological difference we miss by lumping such cases together. The difference

¹ It is not my intention to pick on Smith. His is simply a very clear and oft-cited example of a long-standing means of defining the rough contours of illusion (in contrast with non-illusory perception and hallucination). [French and Phillips \(2023\)](#) even deploy this quote as a ‘textbook definition’, in what I take to be a colloquial way of emphasizing the frequency with which this particular phrasing is employed. (Smith’s *The Problem of Perception* is not a textbook, though undoubtedly an influential text.)

I have in mind is the productive role of the imagination in shaping our perceptual awareness.

To warm up to the idea, consider impressions.² A successful impression of someone requires not only behaving as they do—it requires behaving as they do such that one perceptually appears as they do in certain salient respects. In the grip of the generic conception, we might say that a successful impression induces its audience to suffer an illusion. Describing the psychological response of the audience in this way obscures an otherwise obvious fact. Impressions do not merely aim to stimulate the senses; they aim to stimulate the imagination. Sometimes this is merely for the sake of enjoying a fictional scenario in which the person impersonated behaves in the manner of the impression. But in capturing the character of its target, the scope of an impression need not be limited to the fictional. It can serve well as a model for thinking about how a person would behave in some scenario that is likely to occur.

The example of impressions combines two roles for the imagination I want to separate for the sake of clarity. To highlight the ways in which imagination facilitates perceptual awareness of fictional objects and events, I will direct your attention to a case I call *Film*.

Film. I watch a film of a childhood friend's performance, in a TV show in which she stars. Her performance is terrific. She does not appear as the person with whom I have a shared history. She appears as the person she plays, her behaviour fitting a past within the story told.

I will use a different example to highlight the ways in which imagination facilitates perceptual awareness of objects as the objects of which they are models. Call this *HMD*.

HMD. I don a head-mounted display to determine the best placement of a chair I am interested in purchasing. I see my living room, by means of cameras embedded in the device's outer casing. As I manipulate the controls, a photorealistic virtual model appears as a chair of the sort I desire, in front of me in my living room.

² My thanks to Fiona Macpherson for discussion here.

Perhaps one could describe each of these as cases in which something merely has, as Kalderon (2011) puts it, ‘an *F-ish* appearance’, or as cases in which the objects in question are in fact *F*, such that they appear as they are. But I will characterize them in a manner that fits the generic description of illusion. My childhood friend appears as the person that she plays, but she is not that person. The photo-realistic model appears as a chair of the sort I desire, but that is not what it is. I will argue that we gain little from characterizing such experiences as illusory. For in each case the object I perceive appears to be how I imagine it to be. These are not cases of illusion; they are cases of imaginative perception.

To employ a label that is neutral on the issues in question, call any case in which something perceptually appears to me as *F* when it is not *F* a case of *Alternative Appearance*. I will argue that not all cases of *Alternative Appearance* are cases of illusion by engaging with two ways in which the generic conception of illusion is commonly specified. In §II, I will argue that neither the appearance of my friend as the character nor the model as the chair are cases of *Misleading Appearance*, cases in which my perceptual experience inclines me to judge that its object is some way that it is not. And in §III, I will argue that neither of these is a case of *Perceptual Error*, a case in which my perceptual experience represents its object inaccurately. I assume that if a case of *Alternative Appearance* is a case of illusion, that is because it is either a case of *Misleading Appearance* or a case of *Perceptual Error*. It may be that there is a viable way of specifying the generic conception of illusion which is distinct from those I will consider and which applies well to the cases of *Film* and *HMD*. I leave that as a task for others (or another occasion).

My hope is that *Film* and *HMD* are familiar and plausible as cases involving the imagination. This will, I hope, serve to steer you away from certain ways of thinking about the imagination that might become obstacles to understanding. The imagination is sometimes conceived of solely as a kind of deliberate act in which we generate and associate random ideas, in a manner that is largely unstructured and dissociated from the world. A lesson from Walton (1990) is that, whilst all this is certainly within the purview of the imagination, it does not define its limits. The form of imagining that is relevant here (what he calls ‘make-believe’) is rather one that is highly structured, due to its connection with the world. It is in virtue of engaging my

imagination in this way that what I perceive appears to be other than it is in *Film* and *HMD*.

As will be obvious to anyone familiar with it, philosophers of film have seen far down the road that I wish were better travelled (see, for example, Walton 1978, 1990; Currie 1995; Wilson 2011). Drawing on this work in discussion of *Film*, I offer little that is new. My discussion of perceptual awareness of virtual objects in *HMD* is similarly inspired by others who have argued that the notion of fiction provides a powerful framework for understanding the nature of virtual worlds (Tavinor 2010; Wildman and McDonnell 2020) and scientific models (Toon 2012). The innovation here will be to show (in §IV) that this work can be a source of valuable insights for the psychological study of perceptual awareness of so-called high-level properties.³ Thus, despite both my examples involving pictorial experience, my claims are not limited to the appearance of depicted objects. Rather, the examples I use are chosen because there has been recognizable conceptual progress in the literature, progress I hope to build upon to highlight potential paths for more sophisticated psychological work. First, though, I will argue for the basic distinction between imaginative perception and illusion, by developing two more specific ways in which illusions are conceived, namely as *Misleading Appearance* (in §II) and *Perceptual Error* (in §III).

II

On one way of thinking about illusions, we suffer illusions in just those cases in which an object's appearance inclines us to believe that it is some way that it is not. This is to think of illusions as cases of *Misleading Appearance*, cases in which how things appear in perceptual experience can lead to mistaken judgements concerning its object (see, for example, Travis 2004; Brewer 2008; Genone 2014).

An obvious concern for any view which attempts to account for illusions as involving errors of judgement is that there are cases in which things appear *F* when one knows that they are not *F*. These are sometimes referred to as cases of 'known illusion', a typical example

³ I also record here the influence of Strawson's wonderful discussion of themes from Hume, Kant and Wittgenstein, especially the strand of the discussion that concerns what he calls 'kind identity' (Strawson [1970]2008). For my present concerns, I have no need to endorse any general thesis concerning how imagination might 'infuse' perception as suggested there, but see Brown (2018) for discussion.

of which is an optical illusion such as the Müller-Lyer. Anyone familiar with why the Müller-Lyer is described as an illusion surely believes that the two lines are equal. They would not be inclined to judge that one line is longer than the other (as indeed it is not).

A familiar response would be to appeal to the possibility of holding contradictory beliefs concerning what we perceive. Thus, in *The Republic* (601d–603a) Plato describes the appearance of a straight object (such as a stick, presumably) partially submerged in water as producing in us ‘opinions’ in conflict with those we might gain by means of measurement. Moreover, it is plausible that in such cases the perceptual belief—the belief typically caused directly by perception and concerning its object—can be ‘held in check by a stronger belief’ with which it is inconsistent (Armstrong 1961, p. 221; see also Pitcher 1971, pp. 91–3).

Might one account for the cases I have presented in these terms? The thought would be that in *Film* and *HMD* I form perceptual beliefs that are suppressed by my background beliefs concerning the objects of perception. Absent these background beliefs, the thought continues, it is plausible that I might make (or even that I *would* make) the mistake of judging that what I perceive is some way that it is not.

We should be clear that the relevant object of perception here is the depicted object. That is to say, the relevant mistake would not be one of judging that I am directly seeing the object. Typically, when one is aware of a depicted object, one is also aware of the medium of depiction—and yet, despite this, one is aware of the depicted object ‘seen in’ it (Wollheim 1980). It is not at all obvious how it is that we are able to have such pictorial experience; it is not my present aim to establish that this is achieved by means of imagination. There is another sort of mistake that is more relevant for our purposes, one which might be made by someone for whom the object of perception is the object seen in the picture, however that might occur.

The specific form of pictorial experience involved in *Film* and *HMD* is what is sometimes called photographic experience: a distinctive ‘feeling of closeness to things which we see through photographs’ as opposed to hand-made depictions (Walton 1984, p. 271). Whatever one’s account of photographic experience, there is a further question of how it is that the object depicted might appear to be something that it is not, and thus a more relevant kind of mistake that one might make in this regard. This comes out particularly clearly in *Film*. Sometimes we experience films just as ‘a

photographic record of the events filmed'; but we also 'sometimes have photographic experience of the story told', and thus cinema can 'present us with what is merely fictional in ways that are otherwise limited to the real' (Hopkins 2008, p. 156).

Similar considerations apply to *HMD*. I see my living room in the display by means of cameras embedded in the device's housing. Let us assume that my experience of my living room is photographic in the sense indicated above.⁴ Assume also that the virtual model of the chair depicted within that photographic image of my living room is also experienced photographically (despite the means of depiction not being a photograph), such that it appears as a chair amongst other items of furniture in my living room. The sense in which I might make a similar mistake in both *Film* and *HMD* is clear. In both cases, the appearance of photographically experienced objects is such that I am compelled to form mistaken perceptual beliefs: that my childhood friend is the person she appears to be in the story told; that the model of the chair is a chair, as it appears to be. Of course, in these examples, these perceptual beliefs do not issue in mistaken judgement. But, the line of thought continues, this is only because this is a case of known illusion. Just as when someone familiar with the Müller-Lyer is able to hold their perceptual belief in check with a stronger belief, so I am able, familiar as I am with film and head-mounted displays, to hold my perceptual beliefs in check with stronger beliefs with which they are inconsistent.

The basic problem with this characterization is that one would expect a tension that one just does not find in such cases. We ought to suffer 'opposing impulses', as Plato puts it, compelled as we are by conflicting beliefs concerning the same object. This tension is part of what makes cases of known illusion so striking. But I do not undergo the same tension in either *Film* or *HMD*. In the face of how things appear, I do not struggle to refrain from judging that my childhood friend is the person that she plays, nor do I struggle to refrain from judging that the virtual model is a chair.⁵

⁴ I note here, though I lack the space to properly engage with, the complication that the images would be produced digitally (see Hopkins 2012 for discussion).

⁵ In *HMD*, one way of showing a hidden tension would be avoiding the area of my living room into which the image of the chair is projected, or being startled at moving through it. (I thank Jess Leech for this suggestion.) Here it is worth distinguishing between my thoughts concerning the presence of an object apparently at that location and my thoughts concerning the sort of object it appears to be. One only needs to type 'VR fails' into a decent

This, I think, is easy enough to recognize in *Film*. I suffer no tension in my experience of the story told, despite the fact that I do not believe that things are as they appear (cf. Currie 1998, p. 362). But to make the case clear for *HMD* also, consider a case in which one might find oneself struggling to refrain from false judgement. Suzuki, Wakisaka and Fujii (2012) developed a means to alternate presentations of live and previously recorded films of an individual's environment. Participants wore a head-mounted display with embedded cameras and orientation sensors. The recorded films were made using panoramic cameras. The panoramic film was then systematically cropped to the display's size as a function of motion information from the orientation sensors. This allowed the experimenters to systematically vary the participant's view of the environment with the same visuomotor coupling as when they were viewing a live feed. None of the participants noticed the alternation of live scenes and recorded scenes until the switch was made from a live scene to a 'Doppelgänger' scene, in which they saw a recording themselves entering the room in which they were seated—at which point, they all noticed. Half of the participants were then subjected to a further alternation of live and recorded scenes. The majority were unable to tell the difference, reporting confusion and disorientation in both the live and the recorded scenes.

These subjects are in an analogous position to what we would expect of a subject struggling to refrain from judging that the virtual model of the chair that appears to be a chair in front of them is not a real chair. The disanalogous element, of course, is that what Suzuki et al.'s subjects are unable to distinguish by appearance alone is whether what they are seeing in the display is a contemporary or historical record of events in their immediate environment. What is analogous is that when they gained insight into their situation they

search engine to find countless cases in which user behaviour indicates thoughts of the former kind, despite avowals to the contrary. It is a good question what the relevant attitudes are in these cases. Are they 'in-between' believings (Schwitzgebel 2001) or immersed imaginings that shade off into delusion (Schellenberg 2013)? And what drives the formation of the relevant attitudes? As will become clear in §IV, I am open to the possibility that at least part of the story here might involve being subject to illusions concerning low-level properties. However, what matters for my purposes are thoughts concerning the sort of object the model appears to be: it appears to be a chair, indeed a chair of the sort I wish to purchase. My aim is to highlight that in cases such as *HMD* (as in *Film*) one can think of something as being *F*, and indeed be compelled to do so through perceptual experience of that thing, without thereby believing that it is *F*—and what I will claim shortly is that this is because one is imagining that it is *F*.

found themselves in a position where they struggled to refrain from judging that things were as they appeared. This resulted in confusion and disorientation, which, I suggest, is an extreme form of the tension we would expect from a case of known illusion. But that is not the case in *HMD*. I understand that when using a head-mounted display I can perceptually experience a virtual model that appears as a chair of the sort I desire. I suffer no tension, no struggle to suppress errant beliefs, as I attend to the model of the chair and consider the ideal placement of the real chair in my living room.

There is, though, a sense in which I am compelled to form an attitude towards a content that I do not believe. That attitude is in many ways similar to believing, but it is not believing—it is imagining (Currie 1995). Presented with my friend's performance, I am compelled to imagine that she is the person that she plays. Presented with the model, I am compelled to imagine that it is a chair. The object of my imagining is the object of my photographic perceptual experience—my childhood friend, the virtual model of the chair. Perceiving that object prompts me to imagine that it is some way that it is not—something that I might not otherwise have imagined. Moreover, it prompts me to imagine in a manner structured by its properties. It is what Walton (1990) would call a 'prop', a real entity that is systematically related to a fiction by 'principles of generation' that map truths concerning the prop to truths in the fictional world. As I witness my friend's performance, I do not believe that she is, for example, punching her co-star. I understand the relevant principles of generation according to which these staged events correspond to the exploits of the person she plays in the story told. In that story, someone gets punched; the person she plays does the punching. So, as I watch, I am compelled to spontaneously imagine she is someone she is not, and punching someone she is not punching. In virtue of what I imagine, that which I perceive appears to be some way it is not. But it appears as I imagine it to be, not how I believe it to be.

The observed lack of tension is to be expected on this account. For it is a feature of the imagination that one can imagine what one does not believe—indeed, one can imagine the contradiction of what one does believe. I do not believe that a chair of that sort is in my living room, but I can imagine that this is so, even if I believe that no chair of that sort is in my living room. Similarly, I do not believe that my friend is the person that she plays. In fact, because of our

long acquaintance, I believe that she is not that person, yet I imagine that she is.

Here we might find it useful to employ the metaphor of a selectively permeable membrane between belief and imagination. The intention here is to invoke the idea of a boundary, but not so strict a boundary as, for example, is invoked by Nichols and Stich's (2000) notion of 'cognitive quarantine'. The boundary cannot be strict, because sometimes our imagination can only succeed in its aims when what we imagine is regulated in certain ways by what we believe (Schellenberg 2013; Kind 2016). This is especially the case when I aim to arrive at a judgement that is true of the real world, as in *HMD*, where I aim to determine the best placement of the real chair I desire in my living room. I believe that the model of the chair is systematically related to something true of the real world, the appearance of a real chair of the sort I desire. By imagining that the model of the chair is a chair of the sort I desire, I can then exploit this relationship to judge whether the real chair will fit by the sofa, whether it would be better placed by the window, and so on. So my aim in inspecting the model of the chair is to direct my imagination in a way that interacts with my beliefs concerning the real world. The model depicted is useful for this purpose precisely because it appears to have the size and shape of the chair it prompts me to imagine. But the model is not that size or that shape. I do not believe that it is that size and shape, nor do I need to in order for it figure appropriately in my imaginative project.

III

When introducing the generic conception of illusion I am calling *Alternative Appearance*, Smith immediately claims that it is 'irrelevant whether the subject of an illusion is fooled by appearances or not' (Smith 2002, p. 23). This is in tension with a conception of illusion as *Misleading Appearance*. It is hard to see how that conception can be made coherent if we are to set aside the possibility of being fooled. But it fits well with a conception of illusion as *Perceptual Error*, where the error in question is relative to the purported accuracy conditions of perceptual experience.

The key framework assumption here is that perceptual experience presents objects as having certain properties. What it is for something to appear a certain way to the subject (in the relevant respect) is for a subject's perceptual experience to present an object as having

certain properties. For any case in which things appear a certain way to the subject, there is then a question of whether things are as they appear. To answer that question is to determine whether the accuracy conditions for that experience are met. This opens up a variety of possibilities for perceptual experience to be inaccurate: with respect to which properties it attributes, to which objects it attributes those properties, and whether these objects or properties exist (Macpherson and Batty 2016). Our focus here is on cases in which there is an object of perceptual experience: in *Film*, the object is my childhood friend; in *HMD*, the object is the virtual model. In order for these to be cases of *Perceptual Error*, my perceptual experience must be construed as inaccurate in some way with respect to the properties it attributes to these objects. These would then be cases which fit what Macpherson and Batty (2016) refer to as the ‘traditional definition’ of illusion.

The idea that perceptual experience has accuracy conditions is most naturally unpacked in terms of the further claim that perceptual experiences have representational contents that are assessable for accuracy (Byrne 2001; Siegel 2010; Schellenberg 2011). A common metaphor here is the notion of a ‘direction of fit’, applied so as to bring to our attention characteristics that perceptual experience is supposed to share with belief (Searle 1983). If what you believe does not fit the way the world is, you hold a false belief, and this is in some respect a deviant case because belief aims at truth. Similarly, the idea goes, if your perceptual experience does not fit the way the world is, you are misperceiving, and this is in some respect a deviant case because perceptual experience aims at accuracy. A state of belief is a paradigm example of a representational mental state, as a hallmark feature of a representation is that it can represent things as they are not. In such a case, the belief is false because the way in which it represents the world as being—its representational content—is false. And so it goes for states of perceptual experience. Where a subject has a perceptual experience of something appearing a certain way that it is not, that experience represents the world as being a certain way—it has a representational content—which is inaccurate.

All these claims remain controversial. It is not my aim here to weigh in on that controversy. Rather, what I want to do is to develop a sufficiently robust form of an approach to illusion conceived of as *Perceptual Error*, in order to evaluate its

characterization of *Film* and *HMD*. To do that, we will need to grant some further assumptions about the nature of perceptual appearances; in doing so, we will be pushing past several other controversies.

The first is that facts about perceptual appearances are facts about the perceiver and not the object perceived. To have a perceptual experience of something appearing a certain way is to be in state in virtue of which it appears that way. The second is that there is a specific use of ‘appear’ words—such as ‘looks’, ‘seems’, and indeed ‘appears’—that tracks the contents of such states. This is what Chisholm (1957) calls the non-comparative use, where the expression ‘appears *F*’ or one of its cognates is ‘used to convey a thing’s distinctive [perceptual] appearance, not to make an epistemic or comparative claim’ (Byrne 2009, p. 443)—the assumption being that such non-comparative uses reflect the representational contents of experiences.

Perhaps the most significant assumption is that perceptual appearances in the relevant sense are not restricted to exclude properties such as the property of being a specific person or the property of being a certain sort of chair. On some views, perceptual experience only represents ‘low-level’ properties—for instance, visual experience is restricted to attribution of properties such as being a certain colour, having a certain shape, size, texture or position. These properties may be systematically related to other properties we may be inclined to attribute to the objects of experience, but we attribute those properties on the basis of some extra-perceptual conceptualization of the rather more ‘thin’ contents of our perceptual experience.

This will not do for our purposes. For it would then make no sense to construe either *Film* or *HMD* as cases of *Perceptual Error*. There would be no sense in which my childhood friend perceptually appeared as the person that she played, or the virtual model perceptually appeared as a chair. With respect to the attribution of these properties, my perceptual experience itself would not be assessable for accuracy, as perceptual experience is only assessable for accuracy in terms of the properties it attributes. If I were inclined to judge these things to be the case, my judgement would be assessable—but that is not supposed to be relevant at all on *Perceptual Error*. So what we will need to assume is that there is some workable version of the view that perceptual experience can have ‘rich’ content, that

‘high-level’ properties such as being a specific person or a certain sort of chair are part of the content of perceptual experience.⁶

With these assumptions it is clear how we can make sense of *Film* and *HMD* as cases of *Perceptual Error*. I suffer an illusion in these cases just because my perceptual experience represents the objects depicted as being some way that they are not: that my childhood friend is the person that she plays, that the virtual model is a chair.

To see what is wrong with the characterization of *Film* and *HMD* in terms of *Perceptual Error*, we can begin with some of Lopes’s remarks about the experience of film. He notes that ‘we have experiences as of what films represent, whether or not what they represent exists’, and then immediately claims that ‘[there] is no intrinsic or phenomenological difference between experiences as of actual objects and events in movies and experiences as of fictional ones’ (Lopes 1998, p. 345). In *Film*, the putative difference concerns whether a person appears as the actual person she is or as the fictional person she is not. If Lopes’s remarks were correct, then there would be no phenomenological difference whatsoever between a case where she appears as she is and a case where she appears as someone she is not. It is hard to see how this could be so if properties such as being a specific person were part of the contents of perceptual experience. For if they were part of the contents of perceptual experience, then we would expect a phenomenological difference.

Lopes’s remarks help us focus on the question of why things appear to me a certain way with respect to the relevant high-level properties, even if in *other* respects there is no phenomenological difference between how things appear to me in either case. Why is it that I sometimes enjoy the fictional (or non-actual) appearance when things otherwise appear the same? Why is it, as Hopkins puts it, that I ‘sometimes have photographic experience of the story told’ rather than just the events really filmed (Hopkins 2008, p. 156)? Or to use Currie’s term, why is it that sometimes my experience exhibits ‘fictive dominance’, such as when my friend appears as the person she plays, rather than who she really is (Currie 2018, p. 187)?

⁶ Siegel and Byrne’s (2017) debate ranges over typical presentations of the issues here. I intend my discussion to be neutral on whether and how we should draw the boundaries between perception and cognition and whether perceptual processes are cognitively penetrable (Brogaard and Chomanski 2015). But see Brown (2018) for discussion.

The answer I propose is that things appear this way because I imagine that they are this way. The content in virtue of which someone appears to be a specific person in *Film*, or in virtue of which an object appears to be a certain sort of chair in *HMD*, is the content of my imagining. This appearance is not accurate with respect to how things are with them. The accuracy conditions of that content, if it has accuracy conditions at all, ought to be determined relative to the aims of my imagination.⁷ The relevant deviant case then is not illusion, but failure of imagination.

In *Film*, my ‘imagining aims at the fictional as belief aims at the true’ (Walton 1990, p. 41). Thus I might fail to imagine how things are in the fiction. For instance, as the story develops, it might become clear that the person my friend played in an earlier scene was not the person I imagined that she was at the time (perhaps she was playing her twin sister; perhaps her character is a dissembling confidence trickster). Once I am presented with the relevant facts in the fiction, I no longer imagine that she is the person I had imagined her to be. In doing so, I am exhibiting a sensitivity to how things are in the fiction—this parallels the sensitivity I ought to exhibit to how things are in the world, when I believe something to be the case and I am presented with evidence that it is not.

In *HMD*, I imagine that the model of the chair is a chair of the sort I desire, in order to determine where I ought to place one of the latter in my living room. In doing so, I might fail to imagine how things are (or would be) with the real chair because the model is not itself an accurate representation of the chair in some respect. A typical feature of models, including models used in scientific reasoning, is that they are inaccurate in certain respects, even though they are designed to be accurate in other respects (Toon 2012). When we use models, as scientists or prospective furniture purchasers, we are then prompted to imagine that the model is the entity modelled, in a manner that is correspondingly accurate or inaccurate, depending on the relation between the model and the entity modelled.

⁷ Thanks to Ulrike Heuer for making me see that it need not be the case that my imaginings have accuracy conditions in cases of imaginative perception.

IV

I have been arguing that some cases of *Alternative Appearance* are not cases of illusion. I propose that they are cases of a subject imagining of something they perceive that it is some way that it is not. In this final section, I wish to draw out some implications for psychological research on perceptual awareness after some initial remarks concerning the limitations of the present discussion.

First, I should note that it is arguable that the appeals I have made to the imagination in the cases discussed are not essential to show that they are not cases of illusion. I have appealed to the idea that there is a form of imagination in which we hold a belief-like attitude. Why couldn't this just be a form of belief that was highly sensitive to context?⁸ I admit that nothing about these cases suggests that they *must* involve imagination (though that is no obstacle for thinking that they do). Perhaps it would be possible to show that neither *Film* nor *HMD* is a case of *Misleading Appearance* or *Perceptual Error* in this way. That would serve my purposes here well enough and I would be pleased to have learned something. But the challenge for such a view is to show how our beliefs can be sensitive to contexts specified in such different ways as in *Film*, where the context is specified by fictional narrative, and in *HMD*, where the context is specified by the real world.

To get a sense of the scope of the challenge, consider an extension of *HMD*, which we can call *HMD**: As I deliberate, I decide that I should try out some other chairs from the same shop. I pull up a virtual menu, which has no apparent depth and follows my head movement. I select the digital ink function and make ink marks that appear to float in mid-air on each side of the chair-model. I adjust the controls and rescale the model to 90% of its previous size, make some further marks, and then move the model over to the side, where it ends up appearing co-located with the sofa. I then select another option on the menu, triggering a teleportation animation (à la *Star Trek*) after which I no longer see my living room, but a virtual shop floor, replete with virtual models of chairs. The attraction of the appeal to imagination is not just that it offers an explanation

⁸ Thanks to Alex Fisher and Dave Chalmers for pressing this point with respect to *HMD* (see also Chalmers 2017, 2022). An alternative but similar line could be pursued by employing a fragmented model of belief (see Egan 2021 for discussion).

of each of the very different ways I engage with virtual objects and the world here. The attraction is that it also offers a unified explanation in terms of a capacity that develops early (Samuels and Taylor 1994) and is frequently (and spontaneously) used elsewhere (Walton 1990).

Second, I have not argued that there is no respect in which I suffer illusion in *Film* and *HMD*. Indeed, for all that is said here, it may be that in general my perceptual experience is illusory with respect to many of the low-level properties attributed to the objects of my perceptual experience. Take for example, the vertical-horizontal illusion, in which a vertical line appears longer than a horizontal line of the same length which it bisects (Overgaard 2023). This illusion paradigmatically occurs on the frontoparallel plane when the lines are presented perpendicular to the line of sight. If the vertical-horizontal illusion is truly an illusion—and by the lights of *Perceptual Error*, it surely is—then it is one which I would suffer frequently in both *Film* and *HMD*. What I would resist, however, is any temptation to thereby infer from this that I am subject to illusion with respect to the appearance of the high-level property of being a specific person or a certain sort of chair.

With the notion of imaginative perception in hand, it becomes possible to discern ways in which phenomena that are otherwise simply described as illusory might involve a distinctive non-illusory contribution on the part of the subject. As an initial example, take ventriloquism.⁹ There is extensive research on what Howard and Templeton (1966) call the ‘ventriloquism effect’, in which when we synchronously hear a tone and see a flash, our localization of the sound source is biased towards the location of the flash. In the terms introduced, the ventriloquism effect is a bias in our perception of low-level properties. But ventriloquism only aims to induce such a bias in the service of a further aim—what we might call ‘ventriloquism proper’—namely, the attribution of speech (a high-level property) to something that we know cannot speak. This woefully neglected aspect is a prime candidate for a content that we are prompted to spontaneously imagine upon encountering a prop. Indeed, it is plausible that the degree to which the ventriloquism effect is achieved

⁹ My thanks to Jakob Hohwy for this example in discussion of an earlier paper (Alsmith 2015).

may matter for the attribution of the high-level property in ventriloquism proper.

Walton suggests a ‘general principle’ that is a useful start for understanding the relationship between the ventriloquism effect and ventriloquism proper. A performance that did not induce the ventriloquism effect would serve as ‘evidence for the falsity of the [imagined] proposition’ and this would make it ‘difficult to imagine vividly that the proposition [that the puppet is speaking] is true’ (Walton 1990, p. 15). It is natural to infer the converse: that the absence of evidence against a proposition would make it easier to imagine that it is true. Moreover, this might inspire a hypothesis concerning a *positive* relationship between low-level property attributions and the high-level properties to be imagined: the presence of evidence consistent with a proposition would make it easier to imagine that it is true. Call this *Consistency*.

Consistency generalizes well across the cases we have considered. The ventriloquist ensures that as they speak, the sounds she produces coincide with appropriate movements of the puppet. The impression artist speaks with the intonation of her target, gesticulating as they do. My friend throws her fist towards her co-star’s face and a well-timed punching sound is edited in. The size and shape of the virtual model’s image changes as its projected position changes relative to my perspective. In each case, the appearance of low-level properties is arranged such as to be consistent with the proposition to be imagined: that the prop is speaking; that the impression artist is the person they impersonate; that my friend is the character that she plays; that the virtual model is the chair.

As noted above, I offer no objection here to the claim that we suffer illusions with respect to low-level properties. My concern is only that the mere admission that some part of the complex of cognitive processes is illusory can obscure the possibility that other parts may not be. Indeed, *Consistency* suggests that there may be cases in which low-level illusions can facilitate imaginative perception of high-level properties. In previous work, I have argued that the notion of imaginative perception can help explain an otherwise puzzling pattern of subjective reports produced by subjects of multisensory stimulation protocols designed to manipulate the sense of body ownership (Alsmith 2015).¹⁰ That argument was hostage to empirical fortune,

¹⁰ Contra, for example, Vignemont (2013).

but if anything, the case has become even stronger. In closing, I will briefly lay out that case as an illustration of how *Consistency* might allow us to discern the distinctive imaginative contributions to phenomena that are otherwise simply described as illusory.

The central example of the protocols I have in mind is what is often known as the ‘rubber hand illusion’. In its classic form, the subject watches a rubber hand being stroked whilst their own hand is stroked but hidden from view. Botvinick and Cohen (1998) noted that when the seen and felt stroking occurred synchronously, but not asynchronously, their participants responded affirmatively to questionnaire items such as ‘I felt as if the rubber hand were my hand’—I submit that ‘being my hand’ is an excellent candidate for a high-level property. They also measured the perception of low-level properties: in particular, the degree to which the multisensory conflict between seen and felt stroking induced a bias in subjects’ proprioceptive localization of their hand towards the rubber hand. They found this bias in the synchronous but not the asynchronous condition. Accordingly, some researchers used this ‘proprioceptive drift’ measure—one of many non-verbal measures to be developed as alternatives to subjective report—as a proxy for the illusion as measured by subjective report (Tsakiris and Haggard 2005).

In my earlier treatment, I noted two curious developments in the vast body of literature employing this and similar protocols since:

- (i) Measures of high-level properties (for example, ‘being my hand’) have gradually been shown to dissociate from measures of low-level properties (for example, felt hand position) through careful intervention (Rohde, Luca and Ernst 2011; Rohde et al. 2013).¹¹
- (ii) The protocol has been successfully extended to induce reports of experiencing invisible body parts (Guterstam, Gentile and Ehrsson 2013).¹²

Two further developments to note concern individual differences in response to the rubber hand illusion protocol:

¹¹ For more recent work, see Abdulkarim and Ehrsson (2016) and Tamè, Linkenauger and Longo (2018).

¹² See also more recent work by Cadete and Longo (2020) and Cadete, Alsmith and Longo (2022) on invisible sixth fingers; see Guterstam, Abdulkarim and Ehrsson (2015) on invisible torsos.

- (iii) It is common for a subgroup of participants not to report any induced experience of high-level properties—if anything, they report only impressions of strangeness and confusion. These participants are often classified as ‘rejecters’ and removed from reported statistical analyses (Kalckert and Ehrsson 2012, 2014).¹³
- (iv) There are significant individual differences in subjective reports of induced experience of high-level properties when free reports are collected or the standard stock of questionnaire items is expanded. For instance, some participants report being able to move and use the rubber hand; some report the rubber hand beginning to resemble their own; some report their hand beginning to turn rubbery (Longo et al. 2008; Lewis and Lloyd 2010).

On the view developed here, these further developments are a matter of course. In Walton's (1990, pp. 44–6) terms, (iii) is explained by the fact that spontaneous imagining is voluntary. We need not accept that what a prop (such as a rubber hand) prompts us to imagine is indeed to be imagined. (iv) is explained by the fact that when we do engage in an imaginative project, even spontaneously, we fill out the background implications in a manner that we take to be obvious and coherent. But what you take to be an obvious and coherent implication of appearing to have a rubber hand (or those which you may notice as implications when your report is solicited) may be very different from what I do.

In a recent large scale study, Lush et al. (2020) argue that individual differences in positive responses to standard questionnaire items in the rubber hand illusion are explained by individual differences in suggestibility (see also Marotta et al. 2016). They further argue that participants may be providing responses they understand to be the expected consequence of the stimulation protocol (that is, they are responding to ‘demand characteristics’; see Lush 2020). These claims have generated a good deal of debate and controversy.¹⁴ Whilst I do not intend to resolve this debate, my final note here is that all parties to the debate recognize the need to explain individual differences. I hope to have convinced you that differences in the participants' deployment of their imagination may be the key. In a recent review, Henrik Ehrsson, perhaps the most vehement critic of Lush et al.'s

¹³ Ehrsson (2023, p. 220) estimates that roughly 20–40% of participants fall into this category.

¹⁴ See Slater and Ehrsson (2022) and Ehrsson et al. (2022) for re-analysis of the data; see Lush and Seth (2022) and Roseboom and Lush (2022) for response.

research programme, writes of individual differences, ‘The interesting question is why different minds choose different interpretations of the sensory data in illusions paradigms’ (Ehrsson 2023, p.220). To which, amen—*modulo* the unrestricted use of the term ‘illusion’.

Department of Philosophy
King’s College London
Strand
London WC2R 2LS
UK
adrian.alsmith@kcl.ac.uk

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