Unmistaken: Imaginative Perception and Illusion

# Abstract

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 lesson that Austin once tried to teach is that it would be wrong to assume that the notion of illusion operative in certain versions of the Argument from Illusion picks out a uniform category. His concern at the time was a conception of illusion as cases in which it is metaphorically said that our senses ‘deceive’ us (Austin, 1962, p. 11). He notes the poverty of the metaphor in any attempt at generalising over the various phenomena classically cited as cases of illusion. For we are mistaken only in the limit case; we are often quite able to distinguish how things appear in certain circumstances from how they are. One might go further: for instance, Kalderon (2011) suggests that there may not be any cases in which the generic description of illusion applies – there may not be any cases in which something appears *F* when it is not *F*. I argue here that even if there are such cases, it would be wrong to characterise them all as illusory simply in virtue of fitting this description.

Consider an example I will call *Film*. I am watching a film of 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. Another example (call this *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 of a chair appears as in front of me in my living room, then, an instant later, much further away, to my left, by the window.

Perhaps one could describe each of these as cases in which something merely has 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 want to consider what would follow if we characterise them in a manner that fits the generic description of illusion noted above. My childhood friend appeared as the person that she played, but she is not that person. The chair appeared as in front of me in my living room, but it was not there. These would seem to be cases in which something appears *F* but it is not *F*. But I think we gain little from characterising my experience 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.

Please set aside some ways of thinking about the imagination that might serve as obstacles to understanding. The imagination is sometimes conceived 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 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 and partly so due to its connection with the world.

Here is a label for the generic notion of illusion which does not prejudge the issues. Call any case in which something perceptually appears *F* when it is not *F* *Alternate Appearance*. *Alternate Appearance* captures the typical starting point of the Argument from Illusion – that there are, as Smith puts it, perceptual situations ‘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). From here the Argument moves via several controversial premises to the conclusion that we are never directly aware of mind-independent objects. I am not interested here in assessing the Argument. My interest is rather the breadth of the conception of illusion with which it begins. For conceiving of illusion in this way, however popular it may be, obscures a potentially useful distinction between imaginative perception and illusion.

I hope to make clear the general utility of that distinction in section IV. But I should say already that despite both my examples involving pictorial experience, my claims are not limited to the appearance of depicted objects. My choice of examples is guided by the fact that they exhibit features which are useful for developing the more general points that I make in section IV. First, though, I aim to make clear the distinction between imaginative perception and two more specific ways in which illusions are conceived, namely as *Misleading Appearance* (in section II) and *Perceptual Error* (in section III).

# II

On one way of thinking about illusions, we suffer an illusion in just those cases in which our perceptual experience inclines us to believe that its object is some way that it is not, in virtue of it perceptually appearing some way that it is not. This is to think of illusions as cases of *Misleading Appearance,* in which how things appear in perceptual experience can lead one to make mistaken judgements concerning its object.[[1]](#footnote-1)

An obvious concern for any view which attempts to account for illusions as errors of judgement is that there are cases where things appear *F* when one knows that they are not *F*. These are sometimes referred to as cases of ‘known illusion’, a typical example of which is an optical illusion such as the Müller-Lyer. Anyone familiar with why the Müller-Lyer is described as an illusion believes that the two lines are unequal. 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 - 93).

Might one account for the cases I have presented in these terms? The thought would be, presumably, that I hold perceptual beliefs formed in *Film* and *HMD* which are supressed by my background beliefs concerning the objects of perception. Absent these background beliefs, the thought continues, it is plausible 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. But 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 depicted 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 further 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. Assume that the experience of my living room would be photographic in the sense indicated above.[[2]](#footnote-2) And assume that the virtual chair-model depicted within that photographic image of my living room would also be experienced photographically (despite not being depicted by a photograph), such that it appears as in front of me 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 in the story told; that a chair of the sort I desire is actually in front of me, in my living room, 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 characterisation 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 of the chair is a real chair of the sort that I desire.

This, I think, is easy enough to recognise 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 where one might find oneself struggling to refrain from false judgement. Suzuki et al. (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 which appears to be in front of them is not a real chair. The disanalogous element, of course, is that what Suzuki et al.’s subject 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 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*. Understanding that when using a head-mounted display one can perceptually experience a virtual model of an object that appears as in one’s environment does not produce similar results. I suffer no tension, no struggle to suppress errant beliefs, as I observe the photorealistic model of the chair and consider the placement of the real chair I desire in my living room.

There is, though, a sense in which I am compelled 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 of the chair, I am compelled to imagine that it is within my living room. 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 prescribes me to imagine in structured by its properties. Walton (1990) would call it a ‘prop’, a real entity which is systematically related to a fiction by ‘principles of generation’, which map truths concerning the prop to truths in the fictional world. As I witness my friend’s performance in the film, I do not believe that she is, for example, punching her co-star. But 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 prescribed to spontaneously imagine that person is someone she is not, 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 the chair is within my living room, but I can imagine that it is, and I could do so even if I believed that the chair was not 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, *e.g.*, 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 (Kind, 2016; Schellenberg, 2013). 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 *etc.* So my aim in inspecting the model of the chair is to direct my imagination in a way that is regulated by my beliefs concerning the real world.[[3]](#footnote-3) The model depicted is useful for this purpose precisely because it appears to have the size and shape of the chair it prescribes 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 *Alternate 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 said objects and/or properties exist (Macpherson & Batty, 2016). Our focus here is on cases in which there is an object of perceptual experience, but our perceptual experience is construed as inaccurate in some way with respect to the properties it attributes to its object. These are 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 which are assessable for accuracy (Byrne, 2001; Schellenberg, 2011; Siegel, 2010). 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 as *Perceptual Error*, in order to evaluate its characterisation of *Film* and *HMD*. In order 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 a number of 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 in that way. The second is that, there is a specific use of ‘appear’ words – such as ‘looks’, ‘seems’ and indeed ‘appears’ – which tracks the contents of such states. This is what Chisholm (1957) calls the non-comparative use, where ‘appears *F*’ or 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 and 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 conceptualisation 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 perceptuallyappeared as the person that she played, or that a chair of a certain sort perceptually appeared in front of me in my living room. 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.[[4]](#footnote-4)

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

To see what is wrong with the characterisation of *Film* and *HMD* in terms of *Perceptual Error*, we can begin with some of Lopes’ remarks about the experience of film. He claims that ‘we have experiences as of what films represent, whether or not what they represent exists. 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 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 remarks helps us focus in 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 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)?

The answer I propose is that things appear in 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. But the accuracy conditions of that content, if they are determined relative to anything, ought to be determined relative to the aims of my imagination. 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 in the world 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 rather, would be) with the real chair because the model is not 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 prescribed 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.

# IV

I have been arguing that some cases of *Alternate Appearance* are not cases of subjects suffering an illusion. They are cases of a subject imagining of something they perceive that it is some way that it is not. In the course of my argument, I have implicitly assumed that if a case of *Alternate 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 have considered and which applies well to the cases of *Film* and *HMD*. I leave that as a task for others (or another occasion) and instead used this final section to draw out implications.

First, I should note that arguably the appeals I have made to the imagination are not essential to show that not all cases of *Alternate Appearance* are cases of subjects suffering an 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?[[5]](#footnote-5) 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* are cases 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 that 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 which appear to float in mid-air on each side of the chair-model. I adjust the controls and rescale the chair-model to 90% of its previous size, make some further marks and then move the chair-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 of each of the very different ways I engage with virtual objects and the world here. The attraction is also that it offers a unified explanation in terms of a capacity that develops early (Samuels & 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 it bisects of the same length (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. 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 localisation of the sound source is biased towards the location of the flash. But ventriloquism only aims to induce such a bias in the service of a further aim – 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 prescribed to spontaneously imagine upon encountering a prop. Indeed, it is plausible that the degree to which the ‘ventriloquism effect’ is achieved may matter for the attribution of the high-level property. A poor performance may make ‘it difficult to imagine vividly that the proposition [that the puppet is speaking] is true’ (Walton, 1990, p. 15).

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).[[6]](#footnote-6) That argument was hostage to empirical fortune, but if anything, the case has gotten even stronger.

The central example of these protocols 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 to your consideration 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 localisation 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 & Haggard, 2005).

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

1. measures of high-level properties (*e.g.*, ‘being my hand’) have gradually been shown to dissociate from measures of low-level properties (*e.g.*, felt hand position) through careful intervention; and
2. the protocol has been successfully extended to induce reports of experiencing invisible body parts.

Further developments to note are that

1. it is common for a sub-group of participants to not report any induced experience of high-level properties; and
2. there are significant individual differences in subjective reports of induced experience of high-level properties when free reports are collected.[[7]](#footnote-7)

On the view developed here, these further developments are a matter of course. In Walton’s (1990, pp. 44-46) 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) prescribes we 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.

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1. See, e.g., Brewer (2008); Genone (2014); Travis (2004). [↑](#footnote-ref-1)
2. I note here, though I lack the space to properly engage with, the complication that the images would be produced digitally (Hopkins, 2012). [↑](#footnote-ref-2)
3. I am inspired here by the Waltonian treatment of virtual objects in McDonnell and Wildman (2019). But I do not intend to commit to the idea that in engaging with virtual objects in this way our imagination is directed at a fiction (see Friend, 2012). [↑](#footnote-ref-3)
4. 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 & Chomanski, 2015). But see Brown (2018) for discussion. [↑](#footnote-ref-4)
5. Thanks to Alex Fisher and Dave Chalmers for pressing this point. See also Chalmers (2017, 2022). [↑](#footnote-ref-5)
6. Contra, *e.g*., de Vignemont (2013). [↑](#footnote-ref-6)
7. See Haans et al. (2012) and Lush et al. (2020) for review of (i) – (iv). [↑](#footnote-ref-7)