

**What the Nose Doesn't Know:
Non-Veridicality and Olfactory Experience ***

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Abstract: *We can learn much about perceptual experience by thinking about how it can mislead us. In this paper, I explore whether, and how, olfactory experience can mislead. I argue that, in the case of olfactory experience, the traditional distinction between illusion and hallucination does not apply. Integral to the traditional distinction is a notion of 'object-failure'—the failure of an experience to present objects accurately. I argue that there are no such presented objects in olfactory experience. As a result, olfactory experience can only mislead by means of a kind of property hallucination. The implications of my arguments are twofold. First, we see that accounts of representational content cannot always be based on the visual model. And, secondly, we see that we must recast the notion of non-veridicality, allowing for a notion of non-veridical experience that is disengaged from any particular object.*

We can learn much about perceptual experience by thinking about how it can mislead us. The idea that perceptual experiences have content has been motivated in just this way. But much of the philosophical work on perception has focused on vision, with very little consideration of the chemical senses—taste and smell. In this paper, I explore whether and, if so, how olfactory experience can mislead. The paper proceeds in two stages. In the first section, I consider whether a representational view is appropriate for olfactory experience. The tendency among content theorists is to suppose that the experiences of all of the modalities have representational content. But, given the phenomenology of human olfactory experience, it is difficult to see how a representational view of it might go.¹ Moreover, although the idea of an olfactory hallucination is one that we seem *prima facie* comfortable with, the idea of an olfactory illusion is not. Setting aside this latter challenge for the following section, I argue for a view about the nature of olfactory content that honors its phenomenology. In the second section, I consider the notion of non-veridicality for olfactory experience. On the basis of my view of olfactory content, I argue that the traditional distinction between illusory and hallucinatory experience does not apply to olfactory experience. Integral to the traditional notions of illusion and hallucination is a notion of 'object-failure'—the failure of an experience to present objects accurately. I argue that there are no such presented objects in the case of olfactory experience and that the most we get in that domain is a kind of property hallucination.

The implications of my arguments in each section are twofold, but both involve recasting our way of thinking about perceptual experience. First, we see that accounts of representational content cannot always be based on the visual model. And, secondly, we see that we must recast the notion of non-veridicality for olfactory experience, allowing for a notion of non-veridical experience that is disengaged from any particular object.

1. A Representational Account of Olfactory Experience

* This paper is dedicated to Ned Hall, who always pushed me towards olfactory hallucinations—considering them, that is, not having them. I must also thank Dan Korman and Kevin Sharpe for their helpful comments on previous presentations of the paper.

¹ Obviously there are vast differences in acuity between the human sense of smell and that of other animals. The focus of this paper is human olfactory experience (although I will briefly discuss the olfactory abilities of other animals later in section 1). Unless otherwise necessary, I will drop the qualifier 'human'.

Intuitively, the representational content of a perceptual experience is a proposition that specifies the way that the world appears to a subject when having that experience.² If the world is that way, then the experience is *accurate* or *veridical*. Otherwise, it is inaccurate or non-veridical. We can accordingly think of the representational content of a perceptual experience as giving the experience's 'accuracy conditions'. Consider a philosopher's favorite: the experience you have when you look at a ripe tomato. A plausible candidate for its accuracy conditions is that a red, roundish, bulgy object is before you.³

The idea that we can characterize the representational content of an experience with a set of accuracy conditions has serious intuitive appeal. It is both natural and common to think that, in the case of visual experience at least, experience can mislead us about the way the world is. Navy blue clothing can often look black in the store. It is only once you get your new, apparently black, tie out into the daylight that you realize that it is actually navy blue. What you suffer in this case (and, in particular, when you were in the store) is an illusion with respect to the tie's colour. Your experience misattributes blackness to a navy blue object. Still, you succeed in perceiving the tie; it is there, after all. But it might not have been. Like Hamlet's dagger, you might hallucinate a black tie before you. In each case, then, your visual experience commits what I call '*object-failure*'—the failure to present an apparent object accurately. In the illusory case, your visual experience misattributes a property to an (existent) object. In the hallucinatory case, your experience fails trivially—because there is no such object.

The notion of an olfactory illusion is not something that resonates with us.⁴ We seem to have no problem, however, with idea of an olfactory hallucination. Poll your departmental colleagues about whether they think there are olfactory hallucinations and I predict that they will say yes. This is because there are obvious candidates. A common olfactory disagreement between my husband and I involves whether or not we smell gas. Although I often say I can, my husband always assures me that I am wrong. There is no gas leak and, as a result, no gas to be smelled. In this case, my husband deems my experience hallucinatory. And cases like this are common, reflected in our tendency to underestimate our sense of smell and ask the question: *Do you smell that?* Ask your colleagues about olfactory illusions, on the other hand, and, more often than not, their affirmation will not be as ready. And this readiness in the case of hallucination, and cautiousness in the case of illusion, is reflected in the scientific literature on olfaction. Olfactory scientists are quite happy to speak in terms of olfactory hallucinations. But in the case in which an olfactory property is misattributed, talk of illusion is rare. For example, in an introduction to a section on olfactory dysfunction (the 'osmias'), Hawkes and Doty (2009) tell us that "[p]hantosmias are olfactory hallucinations" (p. 111). Dysosmia, on the other hand, is marked by "distorted olfactory perception" (Hawkes and Doty 2009, p. 111). Elsewhere dysosmia is characterized as "distortion in odor quality" (Cowart and Rawson 2001, p. 589) and "disruption in olfactory quality perception" (Cowart and Rawson 2001, p. 589). On the face of it, dysosmia

² Notable among those who think that perceptual experiences have representational content are: Davies (1991; 1992); Evans (1982); Harman (1990); Lycan (1996); McGinn (1996); Peacocke (1983); Searle (1983) and Tye (1992; 1995; 2000).

³ It is controversial whether visual experience can represent the property of *being a tomato*. Would your experience be inaccurate if the object before you was actually an extremely realistic plastic facsimile? If so, then the accuracy conditions must appeal to tomatoes. If not, then the accuracy conditions can stay as above. I take it that it is less controversial to hold that the accuracy conditions of such an experience concern properties like *redness*, *roundness* and *bulginess* than metaphysically richer properties such as *being a tomato*. For the sake of clarity, I take the less controversial route.

⁴ Lycan (2000) echoes this: "Optical illusions are rife and familiar to all; auditory illusions are as well. But it is hard to think of olfactory analogues" (p. 280).

seems to be the olfactory analogue of visual illusion, marked by a distortion of the stimulus and not by a lack of one. But scientists seem hesitant to characterize it as such.⁵

The account of olfactory content I will present in this section explains the hesitancy to speak of olfactory illusions. It will also direct our attention to a notion of non-veridicality for olfactory experience onto which the traditional distinction between illusion and hallucination cannot map, but preserves what I take to be the intuitions behind our comfort with the notion of olfactory hallucination. I leave this discussion for the next section. At present, although we are yet to have a clear idea of how to characterize its accuracy conditions, we can still explore the notion of content for olfactory experience. We have seen that an assignment of content to a visual experience should be compatible with the way things look to a perceiver when she enjoys that experience. Similarly, we could say that an assignment of content to an olfactory experience should be compatible with 'the way that things smell'. Or we may put this phenomenological constraint more neutrally: the content of olfactory experience must respect what olfactory experience is *like*. As we shall see, something like this latter formulation of the constraint is all that we can reasonably require olfactory experience to meet. The next step, then, is to look at what olfactory experience is like.⁶

By way of answering this question, and to provide some helpful contrast, let's consider visual experience further. Vision is 'object-rich', offering up an array of three-dimensional objects. This is because visual experience has a rich predicative structure. It presents the world, indeed distinct things in it, as having certain qualities. As I sit beside the window, a fallen autumn leaf lays on the sill outside. As I look at the leaf, it appears that there is an object—namely, the leaf—and that it has certain properties—redness, ovalness and so on. It appears at a certain determinate location before me, and my experience places redness and ovalness 'on', or 'in', it. Visual experience can also present multiple objects. I look beyond the sill to the dogwood tree from which it fell. I see that there are only a few leaves left on the tree. In this case my visual experience presents individual objects—the leaves—and those objects bear spatial relations to one another (as well as other objects). There is a way that *things* appear in my visual experience.

To be sure, there are some visual experiences in which it does not seem that you are presented with any particular thing. The insomniac's experience of looking at a blank ceiling and the experience of looking at a cloudless summer sky are two such experiences. In each case a perceiver is presented with an undifferentiated colored expanse. In neither experience is the scene as rich in spatial presentation as that of the shedding dogwood outside my window. Still, these circumstances are not typical. And it is true that the *typical* visual experience presents us with relatively bounded particulars and predicates properties of them.

This very point about predication was captured in the main objection to adverbialism. Jackson (1977) was the first to draw attention to the fact that, if adverbialism were true, vision could not solve the Many Properties Problem—namely, the problem of distinguishing between scenes in which the same properties are instantiated but in different arrangements. But it clearly can. So, adverbialism must be false. Considering the Many Properties Problem here can help us by drawing attention to the important differences between visual experience and olfactory experience. Consider the difference between the experience of looking at a green

⁵ This is also reflected in the index entries on books on olfaction. There are entries for 'olfactory hallucination' (or simply 'hallucination') but never, in my experience, any for 'olfactory illusion' (or 'illusion'). See, e.g., Brewer, Castle, Pantelis *et al.* 2006; Wilson and Stevenson 2006.

⁶ By 'olfactory experience', I mean (among other things) a mental event that has phenomenal character. Some scientists think that there are human pheromones, although it is a hotly contested issue. These chemical compounds, species specific in the their detection, are supposed to have effects on endocrine functions such as menstruation and sexual activity. Their detection, however, is supposed to occur unconsciously. According to my use of 'olfactory experience', then, an event consisting of the detection of these chemical compounds does not count as an olfactory experience. For more on pheromones, see, e.g., McClintock (1983; 1999) and McClintock *et al.* (2001).

circle to the left of a red triangle and that of looking at red circle to the left of a green triangle. If visual experience simply reported which properties are instantiated (e.g. that greenness is instantiated, circularity is instantiated, etc.), it would not be able to distinguish between these two experiences. But it clearly can; and it does so by predicating these properties of objects and by presenting them at locations. Each experience attributes circularity and redness (or greenness), and triangularity and greenness (or redness) to different objects and these objects are presented at different locations in one's visual field.⁷

Now consider olfactory experience. Is there ever a way that *things* appear in olfactory experience? Unlike visual experience, olfactory experience doesn't seem to present ordinary objects. If I walk into the kitchen and take in a novel sweet smell, it is only after you have told me that you have been grinding saffron that I am able to say 'I smell the saffron'. What's more, when I stand and talk to you as you grind the spice, the saffron smell doesn't appear to be at any determinate location before me. Rather than smelling that the saffron smell is instantiated at certain locations before my nose and not at others, I simply smell *that the saffron smell is instantiated*. To be sure, I may go on to determine that it is instantiated in certain parts of the kitchen and not in others. But, if I do, I have to rely on moving about, on exploring my environment. Bracket the information I gain from this kind of exploration and any locatedness—other than the simply 'here'—goes as well.⁸ And this, it would seem, applies to any typical olfactory experience. This is not to say that humans are *never* capable of localizing odour sources. We can, but only in a highly controlled laboratory environment and equipped with the appropriate apparatus (Porter *et al.*, 2005; von Békésy 1994). My aim in this paper is to provide an account of the olfactory experiences we all have day-to-day. Most of us will never find ourselves in the laboratory environment. But, day-to-day, we are presented with olfactory properties presented at no other location than simply 'here'.⁹ For this reason, I will not consider in detail the kinds of experiences we have in the laboratory. I will, however, return to them briefly at the end of this section.

Because olfactory experience does not present smells at distinct locations, it cannot solve the Many Properties Problem. Consider a case in which you try to mask the lingering smell of cooked fish by spraying some lemon-scented air freshener in the kitchen. As is often the case with stubborn lingering smells, even though you have covered the entire room with freshener, the fishy smell isn't gone. To be sure, it now smells lemony; but it also still smells fishy. Call this case *Full Cover*. Now consider a case in which you fail to cover the whole room with the spray; you miss a spot by the sink, say. Call this case *Miss-a-Spot*. Standing in the kitchen and taking a sniff, you wouldn't be able to tell whether you were in *Full Cover* or *Miss-a-Spot*. In each case it now smells lemony. And it also still smells fishy. But your experience does not report that the smells are arranged in any particular way.¹⁰ So, if, after a brief exit from the room, you went from being in *Miss-a-Spot* to being in *Full Cover* you would not notice the difference. Unlike our visual example, your olfactory experience would not account for the difference with a change in predication—or, to put it in a weaker way,

⁷ By 'visual field' I mean the scene before the perceiver's eyes. I do not use 'visual field' to denote a mental particular, or sense datum.

⁸ In this characterization of the relevant location, I follow Matthen (2005). I will return to Matthen later in this section.

⁹ Another way to say this is to say that I am interested in the 'static' olfactory experience—the experience one has when one is not moving about, exploring one's environment. We might also call this the 'minimal' olfactory experience. But, I recognize that a lot of our perceptual experience is not minimal. It occurs when we are up and about, engaging with the world. Obviously, a thorough analysis of the nature of olfactory experience would have to consider the investigative nature of olfactory perception—e.g. our active engagement in figuring out where the saffron smell is instantiated and where it is not. Still, if we can motivate the view that the even *minimal* olfactory experience is representational, so much the better for the prospects of a representational account of olfactory experience.

¹⁰ To be sure, there might be a difference in the perceived intensity of the lemony smell in each case. But that would not amount to a difference in the experienced location of that smell.

with a change in where it places the features in question. In both *Full Cover* and *Miss-a-Spot*, your experience reports ‘fishy smell and lemony smell here’, but nothing more.

Because of the considerations raised by the visual version of the Many Properties Problem, it is widely held that object perception presupposes spatial perception. And as a consideration of *Full Cover* and *Miss-a-Spot* has shown us, if olfactory experience only reports ‘these properties instantiated here’, we must conclude that olfactory experience gives us either diminished object perception or no object perception at all.¹¹ This conclusion appears to be behind the following remark from Chalmers (1996): “[s]mell has little in the way of apparent structure and often floats free of any apparent object, remaining a primitive presence in our sensory manifold” (p. 8).

Olfactory experience, then, seems disengaged from any particular object. As a result, we might be tempted to conclude that olfactory experience simply isn’t in the business of representing—that it is, instead, purely sensational or a kind of raw feel. In the very little that has been written about smell in the philosophical literature, this kind of view is presented as the natural view about olfactory experience. In the opening chapter of *Sense and Content* (1983), Christopher Peacocke suggests that “a sensation of ... [smell] may have no representational content of any sort, though of course the sensation will be of a distinctive kind” (p. 5). Although William Lycan holds that olfactory experiences are representational, he, like Peacocke, suggests that, considered in and of themselves, they give us little reason to think so. Lycan tells us that “[p]henomenologically speaking, a smell is just a modification of our consciousness, a qualitative condition or event in us” (1996, p. 281).

Although the view that olfactory experience is non-representational might seem initially tempting, it is not inevitable. In fact we ought to avoid such a view since additional, non-phenomenological, considerations render it implausible. There is no doubt that we think of the senses as informational systems. Although the phenomenology of olfactory experience is not as object-rich as visual experience, we still employ our olfactory capabilities in gathering information about the world. If I open the fridge and smell rotting vegetables, I refrain from putting those vegetables in my mouth. If I am particularly courageous, I root around in the fridge and find the source of the bad smell, so that I can throw it away and ensure that it doesn’t infect other food that I may eat. Similarly, if, in the grips of hunger, I smell something cooking, I make my way towards that food so that I can fulfill my need to eat. Although olfactory experience may not present us with particular objects, it clearly informs the decisions we make and the actions we take. Our olfactory experience has this in common with our visual experience as well as the experiences of other modalities. As guides of behavior and grounds of belief, the experiences of all of the sense modalities form a common kind. A shared representational nature provides a way of accounting for this commonality.

This is made even clearer if we consider our olfactory experiences along with those of other animals. We happily admit that animals with ‘better’ senses of smells than ours enjoy experiences that are

¹¹ In a footnote, Clark (2000) suggests that olfactory experience cannot solve the Many Properties Problem. He says: [p]erhaps human olfaction fails this test; it may lack sufficient spatial character. Can one smell two distinct simultaneous instances of the same acrid odour? Can one distinguish a presentation in which something smells both acrid and musty from one in which something *else* smells musty?” (p. 79).

Smith (2002) also appears to raise the same point. He states:

[I]t may seem to you that you can, standing in a well-stocked florist’s, smell the odours of the flowers filling the room. On reflection, however, we realize that this is not really so. A single, strongly perfumed and variegated bunch of flowers under your nose could lead to the same perception. Blindfolded, you would not be able to tell the difference. (138)

representational.¹² After all, their olfactory experiences are for them as our visual experiences are for us. They use their noses where we typically rely on our eyes. We have no problem in admitting that the world appears to us in certain ways in visual experience and, as a result, no problem in granting the same to other animals' olfactory experiences. Moreover, although the olfactory capacities of many animals outshine our own, there is no doubt that our olfactory experiences function like theirs to guide behavior and action. Given this, it would be strange to conclude that their olfactory experiences are representational and ours are not. The more plausible view is one according to which our olfactory experiences differ from theirs in degree of richness and not in kind.

The plausible view, then, is one according to which olfactory experience has representational content. But the considerations that we have relied on in coming to this conclusion do not focus specifically on the phenomenology of human olfactory experience. Does this mean that we should abandon the phenomenological constraint on content? No, we should not. Other considerations have led us independently to the conclusion *that* olfactory experience has content. But, we are still left with the question of *what* content it has. And in this is where the phenomenological constraint does its work. In section 1, I drew attention to a neutral formulation of the constraint: the content of olfactory experience must respect what olfactory experience is like. There is no doubt that there is something that it is like to have an olfactory experience. And, although there is no way that particular things smell in olfactory experience, there is a way that the *world* appears in it—even if it appears in a much less 'specific' way than it does in visual experience. Although olfactory experience does not 'pin' properties onto any particular thing, it certainly seems as though we are coming into contact with something external to us. After all, integral to smelling is breathing. When we smell, we literally take in portions of the world; without doing so, we couldn't hope to smell anything. To be sure, we typically are not aware of our breathing, and so it might seem phenomenologically incorrect to say that we experience it as a way of literally taking in portions of the world. Even when we pay close attention to our breathing, it is questionable whether we experience it this way. But, one exception to this is when we smell something and, in cases of an unpleasant smell, when we hold our breaths to avoid smelling it. In these smelly circumstances, it does seem as if we are drawing something into ourselves that is distinct from us, or avoiding doing so. By contrasting the phenomenology of breathing in the case where we smell something and the case where we do not, we see that olfactory experience involves our being directed towards the world in a significant way—even if we are not directed towards any particular object in it.¹³ Although not as rich as the visual case, there is something for the phenomenological constraint to work with in the olfactory case.

At this point we might be tempted to eschew objects in an assignment of content to olfactory experience and embrace a view according to which it is simply the *world* that appears to have certain properties. But it would be wrong, or at least imprecise, to do so. Typically, when philosophers ask how the world appears to be in a certain experience, what they are after is a characterization of how the things in the world appear to be in that experience. When, in the grips of a poetic insomniac moment, I stare up at a blank

¹² Consider the hammerhead shark as an example of just such a case. The shark's sense of smell is remarkable in that it is directional. Like the human sense of hearing, sharks can typically determine the direction that an odourant is coming from. (See, e.g., Hodgson and Mathewson 1971). The hammerhead shark as an extreme example of the physiology that makes this possible. The distance between the nasal cavities is large in most sharks but it is at its largest with the great hammerhead. An odourant coming from the extreme left of the shark's head will arrive at the left nasal cavity before it does the right. To be sure, this is an extreme case. But researchers have shown that, in many other cases, the hammerhead is able to sample more of the medium than other sharks and, as a result, is able to resolve differences in odourant concentration between each nostril. This also allows the shark to locate the direction of the odour source.

¹³ I must thank Susanna Siegel for drawing my attention to this point.

ceiling and describe the way the world appears to be, I take myself to be describing the way that *something* in the world appears to be. In this visual case, where it seems as if no particular thing is visually presented, we do not conclude that one's visual experience fails to attribute properties to objects. It does, just not in a way that allows us to pick out the particular object presented. Why suppose that it is any different in the olfactory case? Although olfactory experience is not as object-rich as the typical visual experience, we need not, and ought not, conclude that it fails to attribute properties to objects. As a consideration of *Full Cover* and *Miss-a-Spot* has shown us, olfactory experience gives no information about the layout of objects around us. But, as the ceiling example shows, it is a further claim that olfactory experience gives us *no* information about objects. And that further claim is implausible. The idea that natural selection would preserve a sensory 'system' that provided the organism with no information about the objects in its environment seems, at best, extremely implausible.

The task before us, then, is to provide an account of olfactory content that respects its phenomenology but also allows that it predicates properties of objects. Obviously an object-involving account of its content is not an option. We have seen that olfactory experience gives us the ability to distinguish the properties presented to us, but that it does not allow us to refer to the particular objects that instantiate them. As a result, there is no way that *things* smell. Those in favour of an object-involving account of visual experience argue that an abstract account of content ignores a crucial phenomenological fact, namely the particularity of visual experience.¹⁴ It can't be, the argument goes, that my visual experience of the leaf on the sill represents that *something or other* is red, oval and so on. Rather, it represents that a particular thing (that very thing there!) is so. But, despite its lack of fit in the visual case, this kind of abstract view is a remarkably good fit for olfactory experience. Our consideration of the Many Properties Problem has shown us that olfactory experience does not present us with multiple objects. Indeed, consideration of this problem has shown that olfactory experience predicates properties to just one object—and not in any way that enables us to pick that object out. That is to say, olfactory experience predicates properties to a 'something we know not what'. As a result, the view that olfactory experience tells us nothing more than that *something or other* is fishy and lemony fits nicely with the phenomenological facts. Armed with a notion of abstract (i.e. existentially quantified) content, we can say, more generally, that a given olfactory experience represents that there is *something or other here* with certain properties.¹⁵ In other words, if abstract content in general has the form $\exists x(x \text{ is } F \ \& \ \text{at } L)$, then olfactory experience in particular has the form $\exists x(x \text{ is } F \ \& \ \text{here})$. While a characterization of the content of olfactory experience might be rich in terms of predicates (as rich as the situation we are in and our discriminatory abilities allow), it will only ever need one quantifier and reference to the undifferentiated location of 'here'.¹⁶ On the abstract view, then, the experience you have in *Full Cover* and the experience you have in *Miss-a-Spot* do not differ with respect to their representational content. Each has the content $\exists x(x \text{ is fishy, lemony } \& \ \text{here})$. And this is just the result we want.

It is worth pausing for a moment over my characterization of the relevant location *L*. In characterizing the location as 'here', I build on a remark of Matthen's (2005) in which he claims: "[smells] have, at best, a *primitive*—that is, an undifferentiating—feature-location structure—every smell of which I am aware is simply here" (p. 284). In previous statements of my view, I have followed Chalmers (2006) who

¹⁴ Those in favour of an object-involving account of visual experience include Burge (1991); Campbell (2002) and Martin (2003). Those who have argued for an abstract, or existentially quantified, account are Davies (1991; 1992; 1996); McGinn (1996) and Tye (1995, 2000).

¹⁵ In another paper (forthcoming), I argue that these objects are in fact odours—collections of molecules in the air.

¹⁶ In this way, it differs from visual experience where, if we assume that its content is abstract, we would require multiple quantifiers and reference to more determinate locations.

claims: “Intuitively, an olfactory experience represents that a certain smell is present in one’s environment, perhaps in a certain broad location” (p. 112). In particular, I have argued that olfactory content has the form $\exists x(x \text{ is } F \text{ and around me})$ or the form $\exists x(x \text{ is } F \text{ and out there})$. But this is not good enough. Although each captures the lack of spatial differentiation characteristic of olfactory experience, they fail insofar as they give unintuitive predictions about veridicality in certain hypothetical cases. Consider the following, inspired by Paul Grice (1961):¹⁷

You’re in a room with two burning sticks of incense. The first gives off a citrusy smell; the second gives off a tropical one. The smells are actually very similar, but different enough that you can easily tell them apart. Now the tropical one is in a tightly sealed box; no smoke is getting out. So, it’s only the smoke from the citrusy incense that actually reaches your nose and triggers your olfactory receptors. However, due to some kind of olfactory malfunction, you end up having a tropical olfactory experience and not a citrusy one. Is your tropical experience veridical?

The intuitive answer is ‘no’; your experience is not veridical. What you are breathing in is in fact a citrusy odour (-cloud), not a tropical one.¹⁸ So, it can’t be that your experience is veridical. But, if your olfactory experience had the content ‘something or other around me is tropical’ or the content ‘something or other out there is tropical’, then we would be forced to conclude that your experience is veridical. After all, there is something tropical around you or out there—namely, the odour in the box! But, if your experience reports that there is something or other *here* that is tropical, then we get the intuitive result. Your experience is not veridical. What is *here* is the citrusy odour. It is the citrusy odour that you are taking in, after all. The tropical odour is not here; it is *there*. Characterizing the relevant location as ‘here’, we preserve the lack of spatial differentiation characteristic of olfactory experience while, at the same time, preserving our strong intuitions about the incense case.

Now, we must remember that it is contingent that the typical olfactory experience has content of this form. If more of our olfactory experiences were like those we can enjoy in the lab, then a characterization of their contents would require multiple quantifiers and appeal to more determinate locations than simply ‘here’. Indeed, if more of our olfactory experiences were like those had in the lab, then the typical olfactory experience might be one for which an object-involving account of its content is more appropriate.¹⁹ As it stands, however, this is not the typical olfactory experience, and the right view about olfactory content is one according to which it has a very weak kind of abstract, or existentially quantified, content.

2. Non-Veridicality and Olfactory Experience

Earlier, I drew attention to the fact that the notion of an olfactory illusion doesn’t seem to resonate with us, but that the notion of olfactory hallucination does in some sense. My view about olfactory content can explain why this is.

As we have seen, it makes sense to speak of accuracy conditions in the case of visual experience.²⁰ In the case of the typical visual experience, we can ask two separate questions of the object of experience, *o*:

¹⁷ I am indebted to Dan Korman for pointing this case out to me.

¹⁸ I add the expression in parentheses to stress that ‘odour’ refers to a particular. Again, I take it that the actual olfactory objects are collections of molecules in the air. See also fn. 15. Having stressed this again, I will leave the parenthetical remark in what follows.

¹⁹ If more of our olfactory experience were like those of the lab, we would be considerably more like the hammerhead shark. See fn.12.

²⁰ It is not simply the visual domain for which it makes sense. For examples of illusions in the auditory domain, see Deutsch (1974; 1981) and Deutsch and Roll (1976). For examples of those in the tactile domain, see Mochiyama *et al.* (2005).

For any property *F* that *o* appears to have, does *o* really have *F*? (*V-Attribution*)

Is *o* there at all? (*V-Existence*)

Consider, once again the experience I have when I look at the leaf on my window sill. In this case, there is a particular thing of which we can ask, as in *V-Attribution*, “yes, it *appears* to be red, but is it really as it appears?” And, similarly, there is a particular thing of which we can ask, as in *V-Existence*, “yes, it *appears* to be there, but is it?” As we know, if the answer to either is ‘no’, then visual experience fails to present an apparent object accurately; it commits object-failure. But they commit it in different ways. If the answer to *V-Attribution* is ‘no’ (because the leaf is yellow, say), my experience misattributes a property to an (existent) object. And if the answer to *V-Existence* is ‘no’ my experience reports that an object is present when it is not. This difference in the kind of object-failure committed—the difference between visual illusion and visual hallucination—is marked by the different content of *V-Attribution* and *V-Existence*, in what we ask of a given object of experience—in this case, the particular leaf before me.

If there were olfactory analogues of *V-Attribution* and *V-Existence*, we could ask of an object of olfactory experience, *x*:

For any olfactory property *F* that *x* appears to have, does *x* really have *F*? (*O-Attribution*)

Is *x* there at all? (*O-Existence*)

But, as I argued above, unlike visual experience, olfactory experience seems disengaged from any particular object. It grants us minimal object discrimination. Olfactory experience never presents us with an individual object, at least not in the way that vision might present a particular leaf. That is to say, there are no ‘objects of olfaction’ in the way that there are objects of vision. For this reason, there is no particular thing of which we can ask, as in *V-Attribution*, “yes, it *appears* to be fishy, but is it really as it appears?” In that sense, there are no olfactory illusions. This explains why the idea that a smell is misattributed to something has no obvious purchase and, in turn, why the notion of olfactory illusion does not sit well with us. But, for similar reasons, there are no olfactory hallucinations. That is, there is no particular thing of which we can ask, as in *V-Existence*, “yes, it *appears* to be there, but is it?”

But now we are faced with a puzzle. In section 1, I drew attention to the fact that there is a sense in which the notion of an olfactory hallucination resonates with us. But, we have just concluded that it must not. The abstract view of olfactory content can explain why we are not comfortable with the notion of an olfactory illusion. And it can also solve this puzzle. The explanation of our unease with the idea of an olfactory illusion lay in a consideration of the kinds of questions that we are unable to ask in evaluating a given olfactory experience. The explanation of our comfort with the idea of olfactory hallucination lies in considering the kinds of questions we *can* ask in evaluating an olfactory experience given the kind of content it has. This, in turn, directs our attention to the way in which olfactory experience is able to mislead, and the answer to our puzzle.

Consider Paul. Paul is someone who, when presented with a lavender odour, has the experience of the smell of rotting meat. Now consider Mary. Mary is prone to having an experience of rotting meat when there is no odour at all in her vicinity.²¹ For the sake of brevity, let’s call this property ‘putrid’. To go back to the earlier discussion of olfactory dysfunction in section 1, Paul suffers from dysosmia and Mary suffers from

²¹ This is not anything that I have read reported as such. But it is surely a possible olfactory experience and, therefore, one that we can consider.

phantosmia.²² Remember that it is Paul's circumstance that olfactory scientists hesitate to deem illusory. Mary's situation, on the other hand, is widely referred to as an olfactory hallucination. Now, remember further that olfactory experience only ever reports that there is something or other here that has a certain property (or set of properties). According to the abstract view of olfactory content, then, the content of both Paul and Mary's respective experiences is as follows: there is something or other here that is putrid. Or, to put it more formally, the content of each is: $\exists x(x \text{ is putrid \& here})$. Given this content, in evaluating Paul's experience, we can ask:

Is there anything putrid at Paul (i.e., 'here' for Paul)?

And in Mary's case, we can ask:

Is there anything putrid at Mary (i.e., 'here' for Mary)?

That is, given the content of their respective experiences, all we can ask in each case is whether there is something or other 'at them' that is putrid. And we can ask no more. The question in the purported illusory case—Paul's case—is the very same question as the question in the hallucinatory case. And in terms of its form, that question looks a lot more like *O-Existence* than it does *O-Attribution*. Even in Paul's case, the content of olfactory experience constrains us in such a way that, in evaluating his experience, we don't ask whether putrid has been misattributed to an object singled out by the experience, but rather whether there is an object in existence (at him) that is putrid. It is no wonder, then, that we feel more comfortable with the idea of an olfactory hallucination. The only kind of question we can ask in evaluating any olfactory experience is similar in form to the one we ask when querying whether a visual experience is hallucinatory.²³

What this shows is that the traditional distinction between illusion and hallucination does not apply to olfactory experience. But that is not to say there couldn't be non-veridical olfactory experiences. There could: if there is nothing at the perceiver that is putrid, then the content of her experience is false, and the experience is non-veridical. But given the nature of olfactory content, this notion of non-veridicality admits of no further divisions—although it does admit of further characterization.

I said earlier that illusions and hallucinations commit object-failure—the failure to present particular objects accurately. Is it appropriate to think of non-veridical olfactory experience as committing the same? After all, given its content, we are forced to ask whether *there is an object there* that has a certain property. And, again, this sounds like *O-Existence*. It might seem at first, then, that non-veridical olfactory experiences, like visual hallucinations, object-fail trivially because there is no object there. If Paul's experience is non-veridical, it is because there is nothing there that is putrid. Why not say that all non-veridical olfactory experiences are directly analogous to visual hallucinations? This would preserve our intuitions about the possibility of olfactory hallucinations, after all. But it would do so at an expense. To characterize non-veridical olfactory experiences as directly analogous to visual hallucinations would muddy an interesting distinction between visual illusion and hallucination, one defined in terms of the presentation of particular objects. And, presumably, we want to preserve a distinction that has been so useful in helping to characterize and evaluate the contents of visual experience.

Still, there is another notion of hallucination in the vicinity, one free of ties to any object. In the visual case, there is something particular 'in mind' when we ask after the veridicality of an experience. And,

²² In fact, Paul's situation is an instance of a certain form of dysosmia known as *cacosmia*—an olfactory disorder in which a pleasant odour is perceived as foul or putrefactive.

²³ I say "similar" because the questions obviously differ with respect to whether they single out a particular object and ask after its existence. As we have seen, in the visual case, an object is singled out. In the olfactory case, it is not.

as we know, there is no particular thing 'in mind' when we ask after an olfactory experience. Let's restrict object-failure to the former case, where it makes the most sense. Rather than squeezing olfactory experience into the visual mold, I suggest that we conceive of non-veridical olfactory experience as a kind of 'property hallucination'. In leading up to my statement of the abstract view of olfactory content, I characterized olfactory experience as reporting *that a given property is instantiated* (in particular, that saffron is instantiated). And, as the cases of Paul and Mary have shown us, olfactory experience is best described as non-veridical when putrid (in their cases) is not instantiated—i.e. when there is no putridness at them. Olfactory experience, then, is non-veridical when a perceiver hallucinates that a given property is instantiated. In Paul's (or Mary's) case, his (or her) olfactory experience is a *property* hallucination. Given this, non-veridical olfactory experience is best described as committing, not object-failure, but '*property-failure*'.

Now, this might rub the wrong way. But it should not. Up until this point, hallucination has been defined in terms of objects. It is what we are used to because we are used to the visual model of thinking about perception. But this doesn't mean it has to, or indeed should, stay this way. As the case of olfactory experience has shown us, some misleading experiences are better captured by a notion of hallucination defined in terms of properties.

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