

A Representational Account of Olfactory Experience

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Seattle rain smelled different from New Orleans rain.... New Orleans rain smelled of sulfur and hibiscus, trumpet metal, thunder, and sweat. Seattle rain, the widespread rain of the Great Northwest, smelled of green ice and sumi ink, of geology and silence and minnow breath.

- Tom Robbins, *Jitterbug Perfume*

Much of the philosophical literature on perception has focused on vision. This is not surprising given that vision holds for us a certain prestige. Our visual experience is incredibly rich, offering up a mosaic of apparent three-dimensional objects. For this reason, it is commonplace to suppose that visual experience is *world-directed*, with the view taking its most popular form in the *representational*, or *content*, *view*. World-directed views contrast with what we might call *subjectivist views*—views according to which experiences are raw feels or mere sensations.

There is very little discussion of content for the chemical senses—smell and taste. The tendency among content theorists is to suppose that the experiences of all of the modalities have representational content. However, given the phenomenology of olfactory experience, it is difficult to see how a representational view of it would go. A subjectivist view of it might seem inevitable. This is a serious problem given that the notion of representational content is central to important metaphysical and epistemological projects in the philosophy of mind. Many philosophers of mind believe that a physico-functionalist account of mental representation is in the offing. If we can motivate the view that perceptual experiences have representational content, then we lay the groundwork for a purely naturalistic account of perceptual experience. Similarly, by providing a means of explaining how we can be in direct experiential contact with the world, the notion of representational content alleviates skeptical worries brought about by views according to which our perceptual access is indirect. Olfaction, then, presents an important challenge for representational views to overcome. In this chapter, I argue for a representational account of olfactory experience that fits its phenomenology.

In the first two sections, I introduce our subject matter. In section 1, I explain what representational content is and, in section 2, I make some initial observations about the

phenomenology of olfactory experience by comparing it to experiences in the other modalities. Section 3 draws on the observations made in section 2. Given what olfactory experience is like, I show how a subjectivist view of it might seem inevitable. In section 4, I show that it is not inevitable by arguing for a representational view according to which olfactory experience has a much ‘weaker’ kind of content than its visual counterpart. In doing so, I expand on phenomenological points that I made in section 2. Finally, in section 5, I show where this conclusion sits within the greater project of providing a representational theory of the sense modalities.

1. What is Representational Content?

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.¹ If the world is that way—if the representational content is true—then the experience is *accurate* or *veridical*. Otherwise—if the content is false—it is inaccurate or nonveridical. 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 be before you.²

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.³ Consider how your apparently black sock is revealed to be navy once you leave the house and get it out into the daylight. Similarly, we might suppose that, in the tomato case, what you are actually looking at is a cleverly lit albino tomato. Although the albino tomato looks red, roundish

¹ 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).

² 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.

³ Following Austin (1962), Travis (2004) argues that perceptual experience is *not* representational but is still able to mislead. But Travis’ explanation of illusion is unsatisfying—in particular, his explanation of the Müller-Lyer illusion. In order to accommodate illusions, Travis introduces the notion of a ‘look’ of a thing. According to Travis, the look of something is one of the ways that it actually is, and when we are confronted with the look of the Müller-Lyer lines, we are confronted with a way that they, together, actually are. Given the look of the lines, we might *expect* that the lines differ in length when, despite that look, they do not. According to Travis, illusions mislead at the level of expectation, then, and not in the way that things look—because they do have that look! But it is difficult to see how the notion of a look of something is supposed to differ from the notion of the representational content of an experience of looking at that thing. If they are indeed different, then Travis’ view replaces representational content with metaphysically questionable entities that are reminiscent of sense data.

and bulgy, it is actually *white*, roundish and bulgy. What you suffer, in each case, is an illusion with respect to an object's color. Your experience misattributes redness to a white object, blackness to a navy one. In both experiences, you succeed in perceiving an object but misperceive one of its properties. This is not the only way that you can misperceive, however. You might hallucinate a ripe tomato before you. Unlike the illusory case, there is no tomato there and you have no perceptual success.

We have seen that an assignment of content to a visual experience should be compatible with the way that things look to a perceiver when she enjoys that experience.⁴ Similarly, we could say that an assignment of content to an olfactory experience should be compatible with “the way that things smell”. If that sounds like begging the question in favor of the view that olfactory experience has content, we could put the constraint more neutrally as follows: the content of olfactory experience, if there is such a thing, must respect what olfactory experience is like. The next step is to look at what it is like.⁵

2. What is Olfactory Experience Like?

We are often told that, compared to most of our animal friends, we are not very good at smelling. And their feats do seem remarkable to us. To take a familiar sort of friend, we know that dogs have a very keen sense of smell. Some can track a human being by the smell of a piece of clothing and find him trapped under several feet of snow. Recent studies suggest that dogs can detect early and late stage lung and breast cancers on the breath of patients.⁶ A less familiar sort of friend, the turkey vulture, also has an acute sense of smell. Flying high above the rainforest, their visual access to the ground cut off by the canopy, these birds are able to detect carrion in an extremely short amount of time. Cover a piece of rotting meat with several inches of groundcover and the vultures are still able to find the meat within forty-five minutes.⁷ Just as impressively, the male gypsy moth is able to detect the pheromones of the female of the species from several miles away.⁸ These animals rely on their ‘noses’ where we would, typically, use our eyes. If I want to find something, I typically *look*. Vision is our preferred modality for navigating and learning about the world.

⁴ Due to the intuitiveness of this constraint, we find representational content also referred to as “phenomenological content” (McGinn 1996, 52).

⁵ By an ‘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 their detection, are supposed to have effects on endocrine functions such as menstruation and sexual activity. See, e.g., McClintock (1983, 1999) and McClintock et al. (2001). Those who hold that there are such things as pheromones claim that their detection occurs unconsciously. As a result, any event that consists of the mere detection of these chemicals is one that lacks phenomenal character. Therefore, it does not count as an olfactory experience as I conceive it.

⁶ See McCulloch et al. (2006).

⁷ See, e.g., Applegate (1990), Bang (1960) and Stager (1967).

⁸ See, e.g., Wilson and Bossert (1963) and Wyatt (2003).

This is because human visual experience has a rich predicative structure. It presents the world, or distinct things in it, as having certain qualities. Consider again the visual experience you have when you look at a ripe tomato. When you look at the tomato, it appears that there is an object—namely, the tomato—and that it has certain properties—redness, roundness and so on. The tomato appears at a certain determinate location external to you and your experience places redness and roundness ‘on’, or ‘in’, it. Visual experience can also present multiple objects. Looking at the dinner ingredients on the counter, you might see a green pepper to the left of the tomato. You are able to distinguish them both, sitting there side by side on the counter.

To be sure, there are some visual experiences in which it does not seem that you are presented with any particular thing—such as the experience of looking at a cloudless sky or some other undifferentiated colored expanse. This kind of case will be important later in the chapter. But, for now, it is important to see that the typical visual experience presents us with relatively bounded particulars and attributes properties to them.

Audition and touch are like vision in significant ways. There is a spatial element to many auditory experiences. We hear sounds as coming from certain directions, as presented in relatively determinate locations in space external to us. We can also hear multiple sounds at different locations. I might hear a bird chirping on the window ledge to my left at the same time as I hear the coffee grinder in the kitchen to my right. Not all auditory experiences are directional or determinately spatial—for example, consider the familiar experience of hearing a cell phone ringing when you have no idea where the cell phone is. But, for purposes of drawing the comparison with olfactory experience, it is enough to see that some are. In touch, like vision, the surfaces of objects are presented as being external to the perceiver and we locate these surfaces relative to our bodies. Objects literally come into contact with the skin and exert pressure on our bodies. Any smoothness or roughness one feels, for example, appears to qualify those objects. Moreover, like vision and audition, it is possible to perceive multiple objects by touch. Consider a situation in which you hold a small object in each clenched hand.

But I take it that, for most of us, auditory and tactile experiences do not have as rich a structure as their visual counterparts. As we have seen, visual experience presents us with an extremely intricate geometry. Although auditory and tactile experiences also exhibit spatiality, they fall short of that exhibited by visual experience. For example, although tactile experiences can present multiple objects in spatial relations to one another, the numbers of objects that we are capable of distinguishing by touch is much smaller. We can touch many objects simultaneously, of course. Right now, I am touching the chair I sit in, the wall under my desk with my foot and the keyboard with my hands. But the point is that the number of objects that we are able to

distinguish is much smaller in the case of touch than it is in vision. Touch does not give us as rich a spatial array of objects as visual experience.⁹

Auditory experience fares better than tactile experience in this regard. But, unlike vision and touch, it is questionable whether auditory experience ever presents us with objects like birds and dogs. To be sure, we say that we hear the bird when it chirps, or the dog when it barks. But we only ever hear the bird, or the dog, by hearing the sound that it produces. Consider a novel noise, one that you have no reason to suppose has been made by one object as opposed to another. It is only once we know what the source of the sound is that we are able to make remarks such as “I hear the dog”.¹⁰ It is questionable, then, whether auditory experiences present ordinary objects. Instead, they plausibly present other kinds of objects or particulars, namely, *events*—auditory happenings or occurrences.¹¹ These events are presented as being located—as when I hear the bird chirping somewhere on my left. Visual and tactile experiences can also present us with events as well as with birds and dogs. But, on the face of it, auditory experience only presents perceivers with events.

On a continuum of richness, then, visual experience sits at the ‘most rich’ extreme while auditory and tactile experience sit down the line at ‘less rich’ positions.^{12, 13} We might equally call this a continuum of *representational richness*, as illusions are possible in all three of these modalities. As I said earlier, examples of illusory experiences are not hard to come by for vision. Although not as common, auditory and tactile illusions can, and do, occur.¹⁴ Can the experiences

⁹ Another difference is that, although tactile experience presents objects as separate from our bodies, the distance at which we can feel them to be is constrained by the body’s limits. Visual presentation of distance is not constrained in this way, although it is constrained by the physiology of the sense organ.

¹⁰ This is something that Berkeley ([1713] 1996) drew attention to in his *First Dialogue*:

Philonous: ...when I hear a coach drive along the streets, immediately I perceive only the sound; but from the experience I have had that such a sound is connected with a coach, I am said to hear the coach. It is nevertheless evident, that in truth and strictness, nothing can be *heard* but *sound*: and the coach is not then properly perceived by sense, but suggested by experience. (144)

¹¹ O’ Callaghan (forthcoming, ms) argues that sounds are events and, thus, that auditory experience represents events. This view also appears to be what Urmson (1968) is getting at when he claims: “like physical objects, sounds are individuals and may be counted” (119).

¹² It has also been suggested that audition and touch differ from vision in that they do not present empty places. Martin (1992) argues for this thesis with respect to touch and Nudds (2001) with respect to audition.

¹³ I set aside the question of whether auditory experience is richer than tactile experience.

¹⁴ In the auditory domain, there is the Deutsch Octave Illusion. To arrive at this illusion, two tones an octave apart are repeatedly presented in alternation. This string of alternating notes is played over headphones in each ear, but when one ear is presented with the high tone, the other ear is simultaneously presented with the low tone, and vice versa. The most commonly reported result is that a series of notes appears to alternate from ear to ear, but that the subject hears the series of notes delivered to the right ear and factors out what is presented to the left ear. So, for example, suppose that at a given time t the right ear is presented with a high note and, at $t+1$, the right ear is presented with a low note. At t , the left ear is presented with the low note, while at $t+1$, it is presented with a high note. What the majority of perceivers report hearing at t is a high note in the right ear and, at $t+1$, a low note in the left ear. But, at $t+1$, it is a high note that is played into the left ear. The perceiver’s experience factors out the stimuli at the left ear while ‘misplacing’ the low note stimuli of the right ear at the left. Correct sound, wrong place. For more on this illusion, see Deutsch (1974, 1981) and Deutsch and Roll (1976).

Tactile illusions appear to be less common than auditory ones. But an example is the Velvet Hand Illusion. In this illusion, a hexagonally patterned piece of mesh is felt to have a strange velvety texture when rubbed between gently pressed hands. One would think, by looking at the piece of mesh, that it would be felt

of the chemical senses even make it onto a continuum of representational richness? I leave discussion of gustatory experience to another paper and focus on olfactory experience alone.¹⁵ Like auditory experience, olfactory experience does not seem to present us with ordinary objects. Moreover, when I sniff around the brewing coffee, the smell does not even seem to occupy more or less determinate locations before me. Rather, the smell simply pervades. And this, it would seem, applies to any typical human olfactory experience. There is some evidence that humans can localize odor sources in highly controlled circumstances (Porter et al. 2005; von Békésy 1994). But these circumstances are the exception, not the rule, and do not represent the typical experiences of human subjects in their environment.¹⁶ For this reason, I will not consider them here.

Moreover, the notion of an olfactory illusion is just not something that resonates with us. As we have seen, it makes sense to speak of accuracy conditions in the case of visual, auditory and tactile experiences. In the case of the typical visual experience and in the case of all tactile experiences, we can ask of the object of experience, *o*:

For any property *F* that *o* appears to have, does *o* really have *F*?

And in the case of those auditory experiences that are directional, we can ask of a certain event, *e*:

For any auditory property *F* that *e* appears to have, does *e* really have *F*?

If there were an olfactory analogue of these questions, 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*?

as having a rough surface. But it is not. The mesh is actually rough but is felt as smooth and velvety. For more on this illusion, see Mochiyama et al. (2005).

¹⁵ I will make some projections, however. When I sip my coffee, I am saturated with its taste. I do not sense its characteristic taste in certain parts of my mouth or on certain regions of my tongue, and experience *no* taste in or on other parts or regions. But I experience it as *in the mouth*—that is, at a relatively determinate location within the confines of my body. It would seem that gustatory experience has some presentational aspects, then. For this reason, it would seem that gustation makes it onto a continuum of representational richness, placed at an ‘even less rich’ position.

¹⁶ Compare this with the shark. 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 odorant is coming from. (See, e.g., Hodgson and Mathewson 1971). Consider 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 odorant 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 odorant concentration between each nostril. This also allows the shark to locate the direction of the odor source. Humans are typically unable to do this without taking on some serious investigative work—getting bodily movement involved and, in some cases, relying on information gained from other sense modalities. I will return to this point later in the chapter.

But, unlike the experiences of these other modalities, olfactory experience seems disengaged from any particular object. It is tempting to conclude that olfactory experience isn't in the business of predication. This would explain why we are reluctant to speak of olfactory illusions. The idea that a smell is misattributed to something has no obvious purchase—unlike the case of visual, auditory and tactile experience.

Compared to visual, auditory and tactile experience, then, human olfactory experience is incredibly impoverished. To put it figuratively: compared to the intricately detailed scenes presented by visual experiences especially, olfactory experiences are mere smudges on our consciousness.

3. Are Olfactory Experiences Purely Sensational?

Given the smudginess of olfactory experience, it might very well seem that the answer to this question is 'yes'. It is hard not to feel drawn to the view that olfactory experience has no objective purport, that it is not world-directed. This places olfactory experience in contrast to visual experience, where such views are taken as an affront to its phenomenology.

Christopher Peacocke in his (1983) maintains that olfactory experiences are not world-directed. In the opening chapter of *Sense and Content*, he 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” (5). Peacocke says no more about olfactory experience, but William Lycan agrees. He claims: “[p]henomenally speaking, a smell is just a modification of our consciousness, a qualitative condition or event in us” (2000, 281), “lingering uselessly in the mind without representing anything” (1996, 145). Although Lycan goes on to argue that olfactory experience is representational after all, he thinks that there is an initial, phenomenological, motivation for thinking that it is not.

Peacocke's view, and the view that Lycan finds *prima facie* plausible, are *Reidian views* of olfactory experience.¹⁷ The backbone of Thomas Reid's discussion of perception is his distinction between sensation and perception. According to Reid ([1764] 2000), “[s]ensation, and the perception of external objects by the senses, though very different in their nature, have commonly been considered as one and the same thing” (167). Setting out the distinction in his *Essays on the Intellectual Powers of Man* ([1785] 2002), Reid claims:

Sensation, by itself, implies neither the conception nor belief in something external. It supposes a sentient being and a certain manner in which that being is affected; but it supposes no more.

¹⁷ Thomas Reid is one of the very few philosophers who has written extensively about smell. In his *An Inquiry into the Human Mind on the Principles of Common Sense* ([1764] 2000), he devotes an entire chapter to it (“Of Smelling”). Others who have substantial discussions of smell are Bhushan (ms), Lycan (1996, 2000) and Perkins (1983). Also notable are shorter discussions in Matthen (2005, 282-288) and Smith (2002, 138-145).

Perception implies a conviction and belief of something external—something different from both the mind that perceives and the act of perception. (199)

Although sensation does not imply “the conception...[or] belief in something external”, a given sensation does give rise to “an immediate conviction and belief of something external” ([1785] 2002, 199)—that is, to a perception. According to Reid, then, perception is the formation of non-inferential beliefs about the instantiation of external qualities.¹⁸

In the case of olfaction, Reid ([1764] 2000) tells us that sensations are caused by the “effluvia” of “animal and vegetable bodies” (25). Consider the act of sniffing a rose. According to Reid, effluvia given off by the rose cause a certain sensation in you. Let’s call it the *rose sensation*. The rose sensation, Reid tells us, gives rise to the immediate and irresistible belief in the existence of an external quality—a quality of the rose or of the effluvia proceeding from the rose. This perception, this belief, has an intentional object—namely, the rose or the effluvium. The rose sensation, on the other hand, does not.

Let’s call the view that olfactory experiences are Reidian sensations the *sensational view*.¹⁹ Both Peacocke’s and Lycan’s remarks suggest the sensational view. According to the Reidian picture of olfaction, rose sensations are not in the business of representing anything. An olfactory sensation is a mere affectation, as Reid put it, or, as contemporary philosophers might put it, a raw feel. According to Reid, olfactory sensations are not world-directed themselves, but they cause other states—namely, beliefs about the instantiation of certain properties—that are. If we take it that Reidian sensations are one and the same as what we now think of as *experiences*, then Reid himself also held that olfactory experiences are purely sensational.²⁰

There is a further interpretation of the Reidian sensational view according to which it is a form of *adverbialism* about olfactory experience. In particular, it is a version of adverbialism according to which sensory experiences themselves do not have accuracy conditions. Beliefs based on these experiences might have accuracy conditions, but the sensory experiences themselves do not. Van Cleve (2004) suggests that the Reidian picture of sensations as object-

¹⁸ This is not entirely accurate. As the block quotation indicates, perception involves the *conception* of something external along with the immediate belief in its present existence. It is controversial just what Reid’s notion of conception is. The most common interpretation is the one according to which Reid’s conception is the conception inherent to belief—subsuming an object under a concept. However, others point out that Reid sometimes refers to conception as “simple apprehension” ([1785] 2002, 295) and in turn argue that his notion of simple apprehension is a kind of mental awareness that does not involve the exercise of concepts (Van Cleve 2004). I do not want to take a stand on this issue here, so I leave out any reference to conception.

¹⁹ It is an interesting question just how the Reidian sensation + perception bundle relates to the contemporary notion of a sensory experience. The sensational view assumes that a sensation is the uniquely sensory act of the mind—what contemporary philosophers would call a sensory experience. Perception is not an experience per se but rather a further cognitive state caused by such an experience. In opposition to the sensational view, one might argue that Reid would have thought that the sensation + perception bundle itself is closer to our notion of an experience, or that any attempt to map the contemporary notion onto Reid is questionable.

²⁰ See n. 19.

less leads us in the direction of this interpretation. Stating the relationship between the two views, he says: “[t]o have a sensation of red is not to be the subject of an act directed upon a red item as its object, but is simply to sense in a certain way, ‘redly’ as the adverbial theory styles it” (105).²¹ According to the adverbialist picture of perception, we do not perceive *something*. Rather, we perceive *somehow* (Van Cleve 2004). An olfactory experience, then, is not a mental event that has a certain object—for example, a rose. To have an olfactory experience is to do something, to perform an “act of the mind”, in a certain way. I may walk quickly; or I may walk slowly. In both cases, I perform an act in a certain way. Similarly, according to the adverbialist, I may experience ‘rosely’ or I may experience ‘skunkly’. Because olfactory experience (as we refer to it) is so smudgy, adverbialism about it is definitely something that makes phenomenological sense.

There is an interesting philosophical point behind these observations about adverbialism—a point that can inform an alternative, representational, account of olfactory experience. The sensational view may seem inevitable, but it is not.

4. Are Olfactory Experiences Representational? Part I

Most discussion of representational content centers on visual experience. As we saw in section 2, the default view is that the properties presented in visual experience are properties of ordinary objects—‘medium-sized dry goods’, as some might put it. This view, it would seem, is grounded in the phenomenology of visual experience. There is significant disagreement, however, about *how* visual experience represents objects.

One view is that visual content is *abstract*, or *existentially quantified* (Davies 1991, 1992, 1996; McGinn 1996; Tye 1995, 2000). This is the view that your experience of the ripe tomato has the following sort of content:

(**Abs.**) There is an object *x* at location *L*, and *x* is red, and round....

The motivation behind this view is the possibility that experiences of two qualitatively identical, yet distinct, tomatoes might be phenomenologically indistinguishable. Moreover, a perceiver might hallucinate a tomato before her and yet be unable to distinguish this hallucinatory experience from a corresponding veridical experience. All of these are visual experiences *as of a red, round object at a certain location L*. To preserve their indistinguishability, the abstract content theorist proposes that the content of each is content into which no particular tomato

²¹ Van Cleve, however, recognizes that drawing this comparison is controversial. For example, there is another interpretation of Reid according to which he held that sensations have *themselves* as objects. This interpretation of Reid rests heavily on remarks such as the following: “[s]ensation is a name given by Philosophers to an act of the mind, which may be distinguished from all others by this, that it hath no object distinct from the act itself” (Reid [1785] 2002, 36).

enters. Both a veridical experience of a red, round object at L and the hallucination of a red, round object at L have (**Abs.**).

Opponents of this view claim that the abstract content view ignores the particularity of experience (Burge 1991; Campbell 2002; Martin 2003). According to the *object-involving* account of content, we cannot ignore this crucial phenomenological fact. Adapting an example from Martin (2003), when I look at the tomato placed before me on the cutting board, I am not presented with *some* tomato or other. I am presented with *this* tomato.²² According to the proponent of the object-involving account, the tomato itself is a constituent of the content of my experience. So, letting ‘*t*’ name the actual tomato before me on the cutting board, my experience has the following sort of content:

(**Obj.**) *t* is red, round...and at L.

The object-involving account allows that visual experience can be the basis of demonstrative thought about objects. It does so because particular objects are a part of content. The view, however, does this at the expense of providing a common account of hallucination and veridical visual experience.

There are many interesting questions about how we might go about upholding either the object-involving or abstract account. Either view must give up one of two attractive claims about the nature of visual experience: (a) that there is a common element to hallucination and veridical visual experience and (b) that there is a particularity about visual experience that allows for the possibility of demonstrative thought about objects. Denying (a), while preserving an object-involving account of content, has recently been at the forefront of discussions of disjunctivism. The proponent of the abstract account faces significant challenges in accounting for (b). The ability to have demonstrative thought about objects is a capacity that, as Martin (2003) rightly notes, no abstract content theorist would willingly cast aside.

It is a good question whether this kind of conflict arises also for olfactory experience. As we shall see shortly, it is not saddled with it. But, first, we must look more closely at our discriminatory abilities in the olfactory domain.

4.1 How Discriminating is Olfactory Experience?

As I said earlier in section 2, the properties presented in olfactory experience seem to be mere smudges on our consciousness. This is why the Reidian sensational view makes sense for

²² Martin states: “[w]hen I look at a duck in front of me, I am not merely presented with the fact that there is at least one duck in the area, rather I seem to be presented with *this* thing (as one might put it from my perspective) in front of me, which looks to me to be a duck” (2003, 173). Consider also Shoemaker (1996b): “[w]hile sense perception provides one with awareness of facts, i.e., awareness *that* so and so is the case, it does this by means of awareness of objects.... In such a case there is always the potentiality of a factual awareness whose propositional content involves *demonstrative* reference to the object or objects of which one is perceptually aware—e.g. that *this* book is to the right of *that* one” (205).

olfactory experience. So that we can understand this smudge point further, compare again olfactory experience with visual experience. In *Seeing and Knowing* (1988), Fred Dretske argues for a view according to which we do not see an object unless we can differentiate it from its environment.²³ I count as seeing the tomato on the table if I can differentiate it from the table, the wall behind the table and the other vegetables placed next to it. In the case of olfaction, we do not achieve this kind of differentiation. When I plug in the fancy air freshener and its smell drifts over to where I am sitting, I am simply presented with a distinctive property. I do not distinguish the place in the scene before my nose at which the property is instantiated from the place at which it is not. I simply smell that it is instantiated.

Dretske acknowledges that there are cases in which this differentiation does not occur in visual experience and yet we still want to count a subject as seeing some particular object—the sky or the colored expanse of a wall up close.²⁴ But he stresses that these are limiting cases. In the case of olfactory experience, the analogue of this circumstance is not the limiting case. It is the *norm*. The point is that it is always like this in olfactory experience; we never, on the basis of olfactory experience alone, differentiate where a certain olfactory property is instantiated and where it is not.²⁵ Doing so involves the conjunction of movement, at least, with olfactory experience. We get up, move around, sniff, foot by foot, room by room. We navigate the olfactory terrain; we actively engage in figuring out where the smells are located in the space around us. Bracket the information gained from movement, and any locatedness of these properties—other than ‘out there’ or ‘around me’—goes as well.

With this in mind, I now want to return to my claim in section 3, that there is a kinship between the phenomenology of olfactory experience and the account of experience that adverbialism provides. One of the main criticisms of adverbialism about visual experience is that it cannot solve the Many Properties Problem—the problem of distinguishing between scenes in which the same properties are instantiated but in different arrangements.²⁶ The experience of (i) seeing a striped circle to the left of a checkered triangle is different from (ii) seeing a striped triangle to the left of a checkered circle. To illustrate:

²³ Shoemaker (1996b) makes a similar claim, but states it in terms of perception in general: “[s]ense perception affords ‘identification information’ about the object of perception. When one perceives one is able to pick out one object from others, distinguishing it from the others by information, provided by the perception, about both its relational and its nonrelational properties” (205).

²⁴ Dretske claims:

Touch your nose to a large smooth wall and stare fixedly at the area of the wall in front of you. There is not much doubt about the fact that you see the wall, or at least a portion of it. It is also fairly clear that you do not differentiate it from its immediate surroundings. In this position it has no environment, and so one can hardly be expected to differentiate it from one. I call this a *limiting case* because, normally, we see things in an environment, against a background, or surrounded by other things (which we also see). (1988, 26)

²⁵ It is always like this outside of the laboratory. Those experiences in the laboratory that I referred to in sec. 2 (p. 4-5) might be more similar to the typical visual experience.

²⁶ Jackson (1977) was the first to make this criticism of adverbialism.

(i)



(ii)



Adverbialism is incapable of accounting for the difference between these two experiences. In (i), a perceiver experiences [stripedly & circularly & to-the-leftly & checkeredly & triangularly] and in (ii) a perceiver experiences [stripedly & triangularly & to-the-leftly & checkeredly & circularly]. That is, a perceiver experiences in the same way in both cases. It makes no difference that the adverbs in (ii) appear in a different order than in (i). By the rules of conjunction, the content-specification in (ii) is equivalent to the content-specification in (i). But clearly there is a difference between experiences of type (i) and type (ii).²⁷

Enter objects to the rescue. Positing objects explains how properties can be co-instantiated. On a representational view, both experiences represent that striped-ness, checkered-ness, circularity and triangularity are instantiated. The difference between them is that each experience attributes the properties in question to different objects at different locations in one's visual field²⁸.

As the air freshener example on the previous page suggests, olfactory experience does not present properties at determinate locations in our surroundings. Because of this, the Many Properties Problem does not arise for olfactory experience. When I spray lavender air freshener to try and mask the smell of cigarette smoke, I do not experience the lavender smell at one location and the smoke smell at another—for example, in the circumstance in which the locations are the same, as the lavender smell being right 'on top of' the smoke smell. Nor does it seem plausible to suggest that there might be a different circumstance in which my olfactory experience reports that the air freshener smell is on top of some of the smoke smell but that I missed a spot. As I sit in the room, I am unable to tell the difference between a circumstance in which I cover the

²⁷ Tye (1989), a former adverbialist, develops a modified adverbialism in response to the Many Properties Problem. For present purposes, it is enough to see that there is a problem with adverbialism traditionally conceived.

²⁸ By 'visual field' I mean the scene before the perceiver's eyes. My use of it is to be distinguished from one in which 'visual field' is taken to denote a mental particular, or sense datum.

whole room and a circumstance in which I miss a spot.²⁹ Each experience reports that the smoke smell and the air freshener smell are instantiated.³⁰ But each experience is silent on where before me these properties are instantiated. Because of this, the experiences are equally silent on what object instantiates which property. Object perception presupposes spatial perception, and if olfactory experience reports nothing more than ‘these properties instantiated out there’ then we are forced to conclude that olfactory experience gives us diminished object perception. This is what 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” (8).

The challenge, then, is to provide a plausible view of how olfactory experience represents olfactory objects given this diminished perception. I turn now to this question. I argue that the right view of the content of olfactory experience is one according to which it has a very weak kind of abstract, or existentially quantified, content.

4.2 How Do Olfactory Experiences Represent?

We have seen that olfactory experience gives us the ability to distinguish that properties are located at the very rough location of ‘around me’, but that it does not allow us to refer to the particular objects that instantiate them.³¹ Our results at this point are suggestive of Austen Clark’s (2000) account of the content of visual experience. According to Clark, visual experience represents that properties are instantiated at place-times.³² As Siegel (2002) observes, there are two ways that we might interpret Clark’s claim that visual experience has this kind of structure.³³ The second of these interpretations directs our attention to the right view about how olfactory experience represents.

²⁹ In a footnote, Clark (2000) suggests that the Many Properties Problem does not arise for olfactory experience. 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?” (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)

³⁰ To be sure, there might be a difference in the perceived intensity of the lavender smell in each case. But that would not amount to a difference in the experienced location of that smell.

³¹ Others have noted this point about perceived location. Consider Matthen (2005): “[smells] have, at best, a *primitive*—that is, an undifferentiating—feature-location structure—every smell of which I am aware is simply here” (284). Consider also Chalmers (2006): “The phenomenology of taste and smell seems to be representational. Intuitively, an olfactory experience represents that a certain smell is present in one’s environment, perhaps in a certain broad location” (112).

³² To be sure, Clark’s view of visual experience has it that properties are presented at much more determinate locations than simply ‘around me’ and so, in this way, must be understood to depart from our results.

³³ For simplicity, I set aside Clark’s comparison of his account with Strawson’s (1963) notion of feature-placing. According to Strawson, feature-placing languages fall short of predication. As we shall see momentarily, Clark does not seem to deny that visual experience is predicative.

The first interpretation of Clark is that he holds that visual experience attributes properties *to* places. Siegel notes that Clark tells us this on more than one occasion.³⁴ But, as a view about how things visually appear, it doesn't seem right. Intuitively, colors and shapes look to be properties of objects like tomatoes. As I look at the tomato before me on the table, my experience does not report that redness and roundness is instantiated by a certain location L. It reports that some object at L—namely, the tomato—is red and round.³⁵

Another interpretation of Clark is that he takes it that visual experience has a certain kind of abstract content: that *something or other* that is present at a certain location L is red and round. The experience does not attribute redness and roundness to a place, and neither does it attribute redness and roundness to a particular object.

Whether this is indeed Clark's view is not important for present purposes. What is important is what consideration of Clark has to tell us about the nature of olfactory experience. As I remarked in section 4, the abstract view for visual experience is controversial. Those in favor of an object-involving account argue that an abstract account ignores a crucial phenomenological fact, namely the particularity of visual experience. But this kind of view is a remarkably good fit in the case of olfactory experience. As with visual experience, it is implausible to suppose that olfactory experience attributes properties to places. Although olfactory experience reports that properties are instantiated 'out there', there is no obvious reason to take it to report that these properties are instantiated by *places*. As we have seen, olfactory experience never reports that properties are instantiated by particular objects. For this reason, an object-involving account would not work for olfactory experience. But with the notion of abstract content, we can construct a view according to which olfactory experience reports that properties are instantiated by objects. Or, given that the Many Properties Problem does not arise for olfactory experience, that these properties are instantiated by *an* object (just one). I turn now to what I call the *abstract view* of olfactory experience.

Let me home in on the abstract view by again comparing olfactory experience to visual experience. Despite what I say above, assume that visual experience has abstract content. This is an innocuous assumption, intended for drawing the comparison with olfactory experience, which (in the human case, at least) can only have such content. The Many Properties Problem shows us that, for some visual experiences, we need more than one quantifier to capture their contents.

³⁴ For example, Clark claims: "[t]he sensation of a red triangle next to a green square...picks out place-times and attributes features to them" (2000, 77). And again: "[t]he *sensation* of a red triangle picks out places and attributes features to them" (2000, 147).

³⁵ This criticism of the first Clark interpretation is behind other, more specific, criticisms of his view. For example, Siegel (2002) draws attention to the fact that Clark's view, interpreted as such, runs into problems in accounting for the apparent motion of a single object through space. Her example:

What happens in sensory phenomenology when a subject sees a basketball make its way from the player's hands to the basket? The information that it's one and the same basketball traversing a single path is not given by sentience if sentience is limited to feature-placing. On Clark's view, the information that it's one and the same basketball traversing a single path has to be given non-sensorily. The subject's visual experience stops short at delivering a series of momentary presentations of orange-and-roundness at a series of places. (141)

Consider the following case: upon arriving home from the farmer's market, I set my groceries down on the counter. The bag tips and some of my bounty escapes and rolls onto the counter—in particular, a tomato (ripe, of course) and a Granny Smith apple. I turn around and see the bag's contents lying on the counter. Suppose that L_1 and L_2 are distinct locations in my visual field. Suppose also, for the sake of simplicity, that shape properties and color properties exhaust the visually salient properties. (So, although the objects on the counter will bear certain relations to one another such as relative size, I leave out any reference to them in setting out the content of my experience.) According to the view that visual content is abstract, the content of the visual experience I have when I look down at the produce on the counter is:

$$\exists x (x \text{ is red, round \& at } L_1) \& \exists y (y \text{ is green, round \& at } L_2).$$

My visual experience presents redness and roundness at one location of the visual field, namely L_1 , and presents greenness and roundness at another, L_2 . Consideration of the Many Properties Problem has shown us that two things are presented. One, namely the tomato, binds redness and roundness while another, the apple, binds greenness and roundness. For this reason, a characterization of the content of my experience requires two quantifiers.

This is not to say that characterizations of all visual experiences will require more than one quantifier. To take a previous example, the visual experience you have when you look at a single ripe tomato will require only one quantifier to characterize it. Similarly, returning to an example of section 2, the experience I have when I look at the expanse of a cloudless sky will require only one quantifier and no reference to a determinate location within the visual field. Defining the whole of the visual field as the location L_v , the content of such an experience would be:

$$\exists x (x \text{ is blue \& at } L_v).$$

As I suggested earlier in my discussion of Dretske, it is this kind of visual experience that provides us with a model for olfactory experience and informs us of the inapplicability of the Many Properties Problem to it. It is the visual analogue of what it is always like in olfactory experience.

Consider again the lavender smell/smoke smell example. Like in the visual case above, we can define the whole of the olfactory field—i.e. the rough location 'around me'—as the location L_o . Because the Many Properties Problem is no problem for olfactory experience, we know that a characterization of the content of my experience will require only one quantifier and no reference to determinate location. Similar in form to the visual case above, it reads:

$$\exists x (x \text{ is smoky, lavendery \& at } L_o).$$

Again, the need for only one quantifier and no reference to a location other than L_0 arises from the fact that olfactory experience does not place properties at determinate locations. All olfactory properties are presented at a single rough location—namely, at L_0 . Given this, we see that there is no need to index for any location other than L_0 .

Now, someone might object to the abstract view by drawing attention to the existence of ‘expert smellers’. It has long been thought that olfactory discrimination can improve with practice—consider, for example, the perfumer. Psychophysical research suggests that, below a certain threshold, so-called expert smellers are far better than normal smellers at analyzing odorant stimuli into their individual “components” (Lawless 1997; Wilson and Stevenson 2006).³⁶ Talk of individual components naturally leads to thought of parts; in turn, thought of parts naturally leads to the thought of spatial relations between particulars. Doesn’t the existence of expert smellers show us that olfactory experience can be more spatially discriminating than the abstract view allows?

Although this objection draws attention to an interesting feature of human olfactory discrimination, it does not show that there is anything amiss with the abstract view. The abstract view does not place any constraints on the number of property-types that a perceiver can distinguish in a given olfactory experience. Rather, what it does constrain is the determinacy of the location at which these properties can appear to be instantiated. According to the abstract view, the only location at which properties appear is the location that consists of the entirety of the olfactory field. While research suggests that expert smellers have enhanced property discrimination, it does not suggest that they are capable of placing these properties at more determinate locations than normal smellers. But this kind of spatial discrimination is what the experts would have to be able to accomplish in order for their expertise to threaten the abstract view. For this reason, talk of “components” should be taken loosely. It does not indicate that expert smellers enjoy added spatial discrimination.

If humans were like other animals, then perhaps characterizations of olfactory content would require multiple quantifiers and reference to determinate locations within the olfactory field.³⁷ Indeed, if we were like other animals, the idea of an olfactory *field* would be something we could get a firmer grip on by thinking about the phenomenology of our own experience. As it stands, it is a fuzzy notion. As should be clear by now, this is symptomatic of the fact that, unlike visual experience, olfactory experience fails to present properties at determinate locations.

³⁶ In a set of experiments, subjects were asked to analyze mixtures of up to seven odorants. Before performing the task, subjects were made familiar with each of the seven odorants. The results indicate that, in the case of two and three component mixtures, it is possible to enhance one’s discriminative capacities with training. Alleged expert smellers were far better than their normal counterparts at identifying the components of odorant mixtures in this range. In the case of four or five component mixtures, both groups were uniformly poor at analysis (Wilson and Stevenson 2006, 177-179).

³⁷ A characterization of those experiences we have in the lab would require more than one quantifier. Indeed, an object-involving account might get footing in accounting for these rare circumstances. If all of our olfactory experiences were like this, we would be considerably more like the shark. See fn. 16.

4.3 Olfactory Objects: What Are They?

Olfactory experience, I have argued, represents that *something or other* around me is, for example, smoky and lavendery. But what are “olfactory objects”, the items that are smoky and lavendery? Up until this point, I have said nothing about this question. As I mentioned at the beginning of section 4, it just seems obvious that the properties presented in a typical visual experience are properties of dogs and cats, tables and chairs, and so on—ordinary objects, that is. In the case of olfactory experience, it is not as obvious what olfactory properties are in fact properties of.

The natural impulse is to say that the qualities of which we are aware are qualities of regular old objects—roses, skunks and chunks of bad cheese—and that these are the external things that are represented in olfactory experience. I remove the lid from the container and it is the cheese that appears to have a bad smell. We certainly think of roses, skunks and bad cheese as the sources of smells. But we also think of them as having a good, or bad, smell—as bearing properties that we ‘get at’ through olfaction.³⁸

However, this isn’t very plausible. Consider how we can have an olfactory experience—the experience of the smell of rotting garbage, say—even though the object that we think of as responsible for the smell is far away. In the summer heat with windows open wide, I might smell the garbage outside from my second floor apartment. Given that my olfactory experience represents that properties are instantiated by something or other ‘around me’, if olfactory objects are things like piles of garbage my experience must be nonveridical. The garbage is not around me; it is downstairs and outside. As we know, this kind of circumstance is not rare. Given this, the view that olfactory objects are ordinary objects makes for an implausible amount of olfactory misperception.

What the garbage case suggests is that olfactory experience presents us with properties of something in the atmosphere—something *in the air*. The stinky garbage is merely the source of an olfactory object, not the olfactory object itself. Although we might say that the room now smells because of the garbage, the distinctive garbage smell property (or set of properties) is more plausibly a feature (or are features) of the air in the room itself.³⁹

³⁸ This impulse is not restricted to the everyday folk. For example, in aid of making a similar point, Matthen (2005) draws attention to Shoemaker’s (1996a) claim that secondary qualities are perceived as “belonging to objects in our external environment—the apple is experienced as red, the rose as fragrant, the lemon as sour” (97).

³⁹ This example is adapted from Smith (2002). His example:

If a particularly malodorous cheese is carried through the room, the smell remains. If we attribute the smell to any physical object, it will be to the room: the room smells, we say. But really, of course, it is the air in the room that smells....Hence, we speak of foul air, and the fragrance of the air. If I put a rose to my nose, I am coming into proximity with the *source* of the smell; and even then, I appreciate the smell only by drawing the odour into my nostrils—that is, the air that has been sweetened by the immediate presence of the rose. (143)

Here I am agreeing with Tye (2000, 2002), who suggests that the properties we perceive in olfactory experience are properties of something in the air. In particular, Tye tells us that olfactory experiences present us with the qualities of *odors*. Smelly objects are those whose molecules are volatile enough to evaporate from their surfaces and enter the air. (This explains why, at room temperature, we cannot smell iron and steel. At room temperature, their molecules are not volatile.) Reid made a related observation. Remember that, according to Reid, “all bodies are smelled by means of the effluvia they emit” ([1764] 2000, 25). These effluvia are the “volatile parts” of odorous bodies ([1764] 2000, 25). Odors themselves are clouds of Reidian effluvia, or modern-day airborne molecules. Odors are particulars, then. Odor clouds can be more or less concentrated, depending on the rate of evaporation and the stillness of the air. Similarly, odor clouds can mix with one another. In any case, odorant molecules enter the nose when we sniff and ultimately trigger the olfactory receptors.

Olfactory experience predicates properties of objects, but olfactory experience itself is otherwise silent on the nature of these olfactory objects. Interrogating olfactory experience will not tell us what olfactory objects are; other considerations suggest that they are odors.

In one way, olfactory experience seems very much like auditory experience. As I drew attention to in section 2, we are able to say things like “I hear the bird” because we hear the sound that the bird makes. As the garbage case has shown us, we are able to say things like “I smell the garbage” because we smell the odor that it gives off. But, as we saw earlier, there is an important difference between the two types of experience. In the case of audition, experience can present us with a particular thing—namely, an auditory event—that we can single out and think about—like a bird’s chirp or a clap of thunder. Visual and tactile experiences also allow us to single out particular things. But olfactory experiences never do. Although they attribute olfactory properties to things that are, in fact, odors, they never present us with the particular odors themselves.

5. Are Olfactory Experiences Representational? Part II

Earlier I drew attention to the fact that the notion of an illusory olfactory experience doesn’t seem to resonate with us. The abstract view can explain why this is. As we have seen, olfactory experience grants us minimal object discrimination. Olfactory experience never presents multiple objects. What’s more, it never presents a single object, at least not in the way that vision might present a particular tomato and audition might present a particular sound. There are no “objects of olfaction” in the way that there are objects of vision and audition. Hence, there is no particular thing of which we can ask, “yes, it *appears* to be smoky, but is it really as it appears?” In that sense, there are no olfactory illusions. But that is not to say that there could not be nonveridical olfactory experiences. There could: if there is nothing in the vicinity that is smoky, then the content of the experience is false, and so the experience is nonveridical.

I have argued that olfactory experience can take its place at the 'least rich' end of a continuum of representational richness and that, as a result, the sensational view is mistaken. Admittedly, I have not presented a decisive argument in favor of the abstract view. I have tacitly assumed the *Unification Thesis*: the thesis that certain philosophical issues about perception should be settled in the same way for each of the sense modalities. In particular, I have assumed the Unification Thesis with respect to representational content. As we have seen, visual experience seems world-directed (specifically, representational), with tactile and auditory experience following suit. The question was: are there impassable obstacles to including olfactory experience with them? So, the Unification Thesis lies behind the question of whether we can fit olfaction on a continuum of representational richness. I have taken this notion of a continuum, and the Unification Thesis, as a starting point for discussing this question. But the Unification Thesis for content is something that needs to be argued for.

There are several considerations in its favor. First, we ought to admit that creatures with better senses of smell than ours enjoy olfactory experiences that are world-directed. After all, their olfactory experiences are for them as our visual experiences are for us. If we take it that *our visual* experiences are representational, then we ought to think that *their olfactory* experiences are as well. But, given that *their* olfactory experiences are representational, we ought to think that *our* olfactory experiences differ from theirs in degree of representational prowess and not in kind. The abstract view provides a way of understanding this difference in degree. A second, related, consideration lies in the fact that, despite their difference in phenomenology, we still take it that the senses function as informational systems. Using the senses, we are able to gather information about the world. Although the phenomenology is impoverished, olfactory experience still functions to guide behavior and action. The smell of smoke, for example, leads me to get up and flee the building. As guides of behavior and grounds of belief, the experiences of the sense modalities form a common kind. A shared metaphysical nature provides a way of accounting for this commonality. If we can plausibly claim that visual experience is representational, then we ought to claim that olfactory experience is as well.

These are merely initial considerations in favor of the Unification Thesis for content. Further work is required in order to establish it. But, as I stated in the introduction, olfaction presents a special challenge to content theorists who accept such a thesis. Olfaction is considered to be one of the senses, yet it seems initially questionable whether its phenomenology can support a representational view. If we have reason to suppose that olfactory experience is not representational, then we have reason to deny the Unification Thesis for content right off the bat. The abstract view clears the way for further work on representational unity to be done.

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