PERCEPTION FIRST*

Seeing is an achievement; you can’t see what’s not there.

—Jerry Fodor

What is more fundamental, perceiving or experiencing? The mainstream position is clear: it is experiencing. All other perceptual states—perception, hallucination, illusion—are metaphysically and explanatorily dependent on experiencing. According to this experience-first approach, experiencing constitutes these other perceptual states, together with non-mental environmental facts. In contrast, there is a small but stubborn minority who endorse a perception-first approach, holding that the paradigm case of successful perceptual engagement with the world, perceiving things as they are, is metaphysically and explanatorily prior to all other perceptual states.2

* Thanks to Frances Egan, E. J. Green, Dan Harris, Zoe Jenkin, Eric Mandelbaum, Brian McLaughlin, Neil Mehta, Eliot Michaelson, Susanna Schellenberg, Ernest Sosa, and Jason Stanley.


Why is the experience-first approach the clear favorite, in both philosophy and cognitive science? I suggest that it is not anything about the experience-first approach per se; rather, it is that a particular way of developing the view has serious explanatory promise: representationalism. Representationalist experience-firsters use representations as a tool to plausibly make progress on three explanatory tasks:

1. **Nature**: Characterize (and so help us to better understand) the nature of the perceptually fundamental kinds.
2. **Dependence**: Explain the nature of non-fundamental perceptual states and how they depend on the perceptually fundamental kinds.
3. **Scientific Naturalization**: Provide a programmatic account of how the perceptually fundamental kinds might obtain in virtue of non-mental facts, which can be used as a framework for scientific investigation into this question.

With any position as popular as representationalism, there will be substantial variation among those who hold the view. Nevertheless, we can fairly straightforwardly characterize the three central representationalist answers to these explanatory questions. Roughly, representationalists claim that:

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Representationalism:

(i) What it is for a subject to have a perceptual experience is for her to be in (or appropriately related to) a state that represents things to be a certain way. Features of perceptual representations explain the distinctive features of experiences, such as how things seem to the perceiver.

(ii) To perceive things as they are is to have a perceptual experience whose content is satisfied in certain environmental conditions, while to hallucinate or undergo an illusion is to have an experience in other environmental conditions.

(iii) Experiences are identical to computational states at a certain stage of perceptual processing. These computational states are already studied by perceptual science, and can plausibly be characterized in wholly natural, non-mental terms.

This general framework is a sketch of a substantive explanatory theory, one that at least allows us to see how we might understand the nature and key features of perceptual kinds, and their places in the natural world. Here the conception of perception as a representational state goes significantly beyond the eminently plausible claim that perceptual experiences are assessable for accuracy, and thus can be systematically associated with truth-evaluable contents. What I am here calling representationalism uses representations as serious explanatory tools that illuminate what perceptual kinds are, what distinctive features they have, and why they are part of the natural world. Representationalism provides one explanation for the fact that perceptual experiences are necessarily assessable for accuracy. One can accept the explanandum and offer a different explanans. I will show below how one might do this.

Of course, the representationalist framework needs to be filled out, and there are a variety of options. For example, a fully worked-out theory would explain exactly how the contents of perceptual experiences are determined, and exactly what environmental conditions are needed for experiences to constitute cases of perceiving rather than hallucinating. And, of course, it might be wrong: perceptual experiences might not be representational states, perceiving things as they are might not be a matter of perceptually experiencing in the right conditions, and computational states as described by perception science might not be identical to perceptual experiences. However, it is a clear and substantive proposal, one that at least prima facie plausibly

\[4\] For a definition of when a perceptual experience has content, see, for example, Susanna Siegel, *The Contents of Perception* (New York: Oxford University Press, 2010).
answers the central explanatory questions that a philosophical theory of perception should seek to answer.

In contrast, perception-firsters have largely been silent on substantive questions in the philosophy of perception or have explicitly endorsed quietist methodological claims. For example, John McDowell, one of the most prominent perception-firsters, is very clear that he is not only uninterested in the three explanatory projects I have listed above, but that he thinks it is a mistake to engage in them at all:

Much contemporary work sets out, in a naturalistic spirit, to answer (not exorcize) questions that can be framed in the “How possible?” form, about empirical content or other aspects of mindedness. The work I mean aims to give perspicuous descriptions of the material constitution of, say, perceivers, in such a way as to make it intelligible that things composed of mere matter can possess the relevant complex of capacities. A question to which this would be an appropriate response is not a “How possible?” question of the sort I am concerned with.

...Evidently it can seem sensible to embark on such a project [of answering “How possible?” questions] only if one does not quite understand the predicament that seems to motivate it...As I have put it, we need to exorcize the questions rather than set about answering them.5

In these two passages, McDowell rejects both Nature and Scientific Naturalization. In the following, he rejects Dependence.

Of course one can be misled into supposing that one takes in that things are thus and so when things are not thus and so. But when one is not misled, one takes in how things are. It does not matter much that one can be misled.6

Whether or not one agrees with McDowell that it is important to “exorcize” certain demons in contemporary philosophy of mind, it is plausible to think that our philosophical work does not stop there. I want to understand what it is to perceive things as they are. I want to understand how we can fail to perceive things as they are, and why we are not always in a position to know we have failed. I want to understand how we and our perceptual faculties are part of the natural world, and how scientific investigation of these faculties can further illuminate them. Such interest in our condition and place in nature need not have its roots in anything more nefarious than basic human curiosity.

5 John McDowell, Mind and World, op. cit., pp. 21 and 23–24, respectively.
6 Ibid., p. 9.
The perception-first approach and the methodological quietism of its most famous proponents can and should be divorced. There is nothing about the perception-first program \textit{per se} that requires it to be less explanatory, or less naturalistic, than an experience-first program. Perception-firsters can positively characterize the nature of perception, and they can use this account to explain illusions, hallucinations, and the place of these perceptual phenomena in the natural world and as objects of scientific inquiry. What follows is an attempt to do just this.

The crucial thing the perception-firster needs is a theoretical tool that can be used to facilitate all three explanatory projects. Experience-firsters use representations; I will use competences. Accordingly, I call my account the \textit{Competence View} of perception. I think that by carefully putting competences to work the perception-firster can develop a genuinely explanatory account of perception, its commonality with hallucination and illusion, and the potential for scientific naturalization without appeal to mental representations or representational contents as explanatory tools.

In setting up the Competence View as a non-representationalist account of perception, I do not mean to exclude the possibility of a perception-first position that invokes mental representations as explanatory tools. I set up my perception-first position as non-representationalist for two reasons. First and most importantly, by not appealing to mental representations at all, I block a potentially devastating objection to the perception-first approach, namely that it smuggles in a more fundamental perceptual state common to perception, hallucination, and illusion that explains their key features and commonalities. If a purportedly perception-first view aims to explain the commonalities between these perceptual kinds in terms of partial sameness of representational content, one might plausibly worry that there is really a representational state in common to the two cases, and therefore the perception-firster has not succeeded in providing an alternative to the experience-first approach. I want to make it clear how there might be a view that explains the commonalities between perceiving things as they are and failing to do so without positing a more fundamental mental state in common to the two cases.

\footnote{Thanks to anonymous reviewers for encouraging me to clarify this point.}

\footnote{I have these worries about views like Burge’s in \textit{Origins of Objectivity}, \textit{op. cit.}, and Susanna Schellenberg’s in “Perceptual Content Defended,” \textit{Noûs}, xiv, 4 (January 2011): 715–50. Even though they claim that there is some difference in representational content when one fails to perceive things as they are, the commonalities in content do so much of the explanatory work that they should plausibly be characterized as experience-first views.}
Moreover, if I can motivate a perception-first view that plausibly accomplishes the three explanatory aims above without appeal to representational tools, it raises the question: What, exactly, do representational characterizations of perceptual kinds add to our understanding of them? Too often there is a quick move from the claim that perception has accuracy conditions to the claim that perception is by nature a representational state. I am suspicious of this move, and more generally of the appearance of theoretical understanding that representation-talk engenders. By articulating an alternative account of the accuracy conditions of perception I hope to promote debate about the extent to which conceiving of perception (and mental kinds more generally) as representational kinds is illuminating.

In each section below, I develop part of the Competence View and show how it plausibly satisfies each of the three explanatory desiderata listed above. My aim here is not to show that the theory I will propose is superior to representationalism; nor is it primarily to add to the arguments for the perception-first approach, although I will add a few. Rather, it is to see what a plausible, genuinely explanatory perception-first framework might look like. Once a perception-first alternative is on the table, we will be able to debate these approaches in a more rigorous and productive way.

I. THE NATURE OF PERCEPTION

The reader initially might be puzzled as to how a perception-first theory could aim to illuminate the nature of perception. Isn’t part of what it is to take perception as first that one takes it as a primitive in one’s theory? Here we must proceed with care. I take perception to be first in the way that representationalists take experience to be first—I claim that perception is metaphysically and explanatorily prior to all other perceptual states, such as hallucination and illusion. This does not entail, however, that perception is either metaphysically or explanatorily primitive, or even that it is mentally fundamental, although I shall make the latter commitment here. Such a perception-first theory can make two kinds of explanatory claims regarding perception. She can try to elucidate the nature of perception by placing it as a species of a more general mental kind—and so help us to understand it by

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9 Many representationalists hold that one has a conscious, person-level experience just in case one has a representational state that meets certain further conditions (for example, being in the global workspace and/or having a certain representational format). Although this kind of view takes mental representations to be prior to experiences, it is experience-first in the sense of interest here: it takes experiences to be most fundamental among the person-level perceptual states of perceiving, having an illusion, and hallucinating that have been traditionally of interest to philosophers.
understanding what it has in common with other aspects of our mental lives. She can also make it plausible that perception so characterized is perceptually and mentally fundamental. (This is related to satisfying the Scientific Naturalization criterion but plausibly distinct from it.) This section is engaged in these projects. If the Competence View can accomplish them, then it can illuminate the nature of perception without providing an analysis of it in other terms.

I.1. Perception Is an Activity with an Agent, Aim, and Target. The first step that the Competence View must make is to positively characterize the perceptual relation. A central claim of this paper is that perception is a kind of active engagement with the world; the relation between perceiver and perceived is the relation between agent and target of the perceptual activity. As a perception-firster, I will not give an analysis of perceptual activities in other mental terms. Instead I will clarify and motivate the sense in which I take perception to be an activity and motivate why this account of the nature of perception helps to explain its key features.

An activity, as I am using the term here, is an event that essentially (i) has an agent, who performs the event, and (ii) is such that the agent performs the event with an aim. Activity is thus a psychological kind and need not be tied to any overt behavior (although it often will be associated with certain overt behaviors). For example, reasoning and imagining count as activities even though they have little if any characteristic overt behavior. In claiming that perception is an activity, then, I need not claim that perception must involve bodily movements, although this is plausibly the case for many perceptual activities (see below). According to the Competence View, the directedness of perception is practical. The perceiver relates to her object as the target of her activity. She does not represent it: she engages with it.10

Some activities essentially have targets, and I think that perception is among them. That is, in some cases having a particular target and/or a certain kind of target of one’s activity is part of what it is to perform the activity. Eating is such an activity. (One cannot eat without eating something.) Eating is an event wherein essentially (i) there is an agent who performs the event, (ii) the agent performs the event with the aim of eating a particular object, and (iii) what the agent eats is the target of her activity.

10 From here forward, I will use the term ‘directedness’ where the term ‘intentionality’ is normally used to talk about the aboutness of thoughts, perceptual experiences, and so on. This is to avoid confusion with ‘intentionality’ as used to characterize the more robust kind of action described above. We want an account on which perception has directedness but is not an intentional action in that sense.
To say that perception is an activity is not to say that it is an *intentional action*, as traditionally meant by philosophers. Intentional actions are often thought to be events that we can decide whether to do (or otherwise control), and that only beings who can provide rational justifications for their actions or reflect upon their reasons for action can do.\textsuperscript{11} It is highly implausible that perceiving satisfies these requirements.\textsuperscript{12}

However, it is equally implausible that all activities with agents, aims, and targets satisfy these requirements. For example, when many non-human animals perform the activities of eating, mating, fleeing, hunting, and so on, we take them to engage in purposeful activities with targets (food, mates, predators, prey, and so on) even though these animals do not perform intentional actions in this more robust sense. Such animals do, however, have aims in acting as they do. They have the aims of eating what they are eating, of hunting what they are hunting, and of fleeing what they are fleeing. This is meant to be an obvious but substantive claim. Barring widespread skepticism about the mental lives of animals, animals must have these aims in at least some sense if they are to count as *doing* these things at all, rather than merely being involved in bodily movements. Performing an activity in the sense I am isolating here is a distinctively first-personal, perspectival, basic aspect of being an intelligent creature: there is something it is like to engage in the world with aims.

Moreover, engaging in an activity requires neither substantial effort, nor the phenomenology of effort. Much of what we and animals do is


\textsuperscript{12}Some other perception-firsters agree that perception is agential rather than passive. They tend to fall into two camps: some think an agential account of perception deals better with empirical evidence (see, for example, J. Kevin O’Regan and Alva Noë, “A Sensorimotor Account of Vision and Visual Consciousness,” *Behavioral and Brain Sciences*, xxiv, 5 (October 2001): 959–73; James J. Gibson, *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin, 1979)). It will become clear shortly how my account differs from theirs. Others are motivated by Berkeley’s Puzzle and argue that if we are to avoid it we must hold that perception is at least partially active (George Berkeley, *Principles of Human Knowledge and Three Dialogues* (Oxford: Oxford University Press, 1996 [1710]); Immanuel Kant, *Critique of Pure Reason*, ed. and trans. Paul Guyer and Allen W. Wood (Cambridge, UK: Cambridge University Press, 1998 [1781/87]); McDowell, *Mind and World*, op. cit.). However, these theorists have employed an overly strong, overly intellectual account of agency, which itself raises problems. Although it is beyond the scope of this paper to argue for this claim, I think that the account of perception that I advocate here can resolve Berkeley’s Puzzle without running into these other issues.
automatic and effortless, even despite our best efforts. For example, we still count someone who is addicted to cigarettes as aiming to light her cigarette when she does so, even if she does it on impulse, reflectively rejects this action, and would rather not perform it. She still counts as the agent of her activity in the sense at issue; she still acts with the aim of lighting up her cigarette, and the cigarette is still the target of her activity. Lighting up her cigarette is part of her perspectival, agential engagement with the world, even if she would rather it not be. I shall from here forward, then, assume that it is possible to perform an activity with an aim in a genuinely mental, person-level, perspectival sense, without performing an intentional action, and that it is possible to do so independently of any abilities to reflect on or deliberately choose what one does.

I can now clarify the claim that perception is an activity. It is an activity in this genuinely person-level, but not quite intentional, sense: perceiving is an event wherein essentially (i) there is an agent who performs the event, (ii) the agent performs the event with the aim of perceiving an object (or perhaps the more determinate modes of perceiving such as seeing, smelling, and hearing objects), and (iii) what the agent perceives is the target of her activity.\footnote{Having a target is built into the aim of perception, just as it is for eating, hunting, and fleeing. Perceiving is among the activities that animals (including ourselves) \textit{just do}, often whether we want to or not, often without effort, and often without much reflective control over when and how we do it.} Having a target is built into the aim of perception, just as it is for eating, hunting, and fleeing. Perceiving is among the activities that animals (including ourselves) \textit{just do}, often whether we want to or not, often without effort, and often without much reflective control over when and how we do it.

The immediate strangeness of the claim that perception is an activity with an aim is, I think, largely due to the fact that we are typically such competent perceivers. We accurately perceive the world automatically and effortlessly. However, in situations where perception is more difficult (for example, due to one’s contact lenses not fitting correctly, or not having one’s glasses on), perception automatically becomes strenuous. This is often despite efforts, for example, not to strain one’s eyes or to do work that requires a lot of focal vision, like reading. That when perception gets more difficult we work to perceive, that we do so even in the face of our higher-order desires and intentions, suggests that aiming to perceive is a basic psychological fact that cannot be explained in terms of higher-order control or desires.\footnote{There are indeed similarities here, but important differences too. Discussion of the relationship between these two claims must be deferred to another occasion.}

\footnote{I mean the term ‘object’ here to be construed broadly, to include surfaces as well. I remain neutral throughout on what kinds of objects we perceive.}
We are typically unaware of this fact because we are consistently successful.

The conception of perception as an activity that I am endorsing here is closely related to Ernest Sosa’s conception of belief as a *performance*, which has now become common in the virtue epistemology literature. Sosa motivates the claim that belief is a performance with an aim by showing how this conception allows us to better understand the epistemic agent both descriptively and normatively. I will motivate the claim that perception is an activity in the same way. Sosa, however, includes among the class of performances not only cases of archery but also of hearts pumping blood.15 This characterization of performances is too expansive for our purposes here.16 First, activities are essentially performed by whole agents. Tyler Burge emphasizes the importance of this in characterizing even the most primitive form of agency, which applies to nearly all animal life.17 However, Burge’s *primitive agency* is still not quite the right conception of agency for our purposes, because it construes the agent’s activities primarily as functionings which need only have an evolutionary telos and therefore might very well be “blind,” that is, non-psychological.18 Because we are interested in illuminating the distinctively psychological features of perceptual kinds, we are here interested in agents as psychological beings, not necessarily as creatures of evolution.19 Thus we are interested in the most basic forms of what Burge calls *psychological agency*.

Burge thinks that some perceptual kinds, such as the direction of perceptual attention, are psychological acts. He denies, however, that perception is generally or constitutively a psychological act, instead holding that it is constitutively a representational state.20 Moreover, he holds that perceptual objectification is required for genuine psychological acts, although he does not argue for this latter claim. His view here is in line with the more general popular thought that activities cannot have intentionality on their own, but rather must inherit it from intentions or other representational states that cause them. I think there is little reason to accept this latter claim. In section I.3, I will argue that there can be psychological activities whose direction toward the world is basic, that is, not explained in terms of any other psychological kinds.

16 I also think it is too expansive for epistemic purposes, as I argue elsewhere.
18 Ibid., pp. 333 and 337, respectively.
19 I intend the account of perception given here to apply to possible genuinely psychological artificial agents, for example.
One might accept the claim that there is a category of psychological agency that does not depend on other psychological kinds for its status as psychological, and still worry about categorizing perception among them. It is common to think of perception and action as having different, distinctive causal profiles. The world impinges on us in causation, whereas we impinge upon the world in action.\textsuperscript{21} Although a thorough treatment of this question is beyond the scope of this paper, I think there are significant reasons to revise our conceptions of the causal profiles for both perception and action.

First, the conception of activity I am operating with here is a distinctively psychological rather than behavioral one, intended to include both “inner” activities like reasoning and world-involving activities like eating. Thus there is not always an outer effect, requiring an inner cause. Next, although in cases of genuinely intentional action, it may be plausible that intentions are prior to and distinct from their corresponding intentional actions, this surely does not hold for all psychological activities. Reasoning, for example, might just spontaneously occur; it need not be caused by some characteristic inner event in order to count as a psychological activity. If activities can have their aims basically—that is, not in virtue of being caused by other psychological states or events—and they need not manifest in overt behavior, it is plausible to think that activities need not have inner causes. Moreover, certain mental activities such as reading might have characteristic external causes that involuntarily prompt engagement in the activity. For example, the presentation of writing in a language one understands will characteristically prompt reading it. This is often something one does automatically, and cannot help but do if one encounters the characteristic external cause. Nevertheless, reading is plausibly an activity, something one does, rather than something that one merely undergoes. The view that perception has characteristic external causes thus does not threaten conceiving of it as an activity.

Next, while there are characteristic causes of perception, it is incorrect to think of perceptual processing as primarily “outward-in.” It is now widely accepted that there is pervasive causal “loopiness” in the visual system involving a range of processes including visual attention, pervasive neural feedback, and ocular movements.\textsuperscript{22} For

\textsuperscript{21}Thanks to anonymous reviewers for motivating me to address this concern.

\textsuperscript{22}See S. L. Hurley, “Alternative Views of Perception and Action,” chapter 10 in Consciousness in Action (Cambridge, MA: Harvard University Press, 1998), for a then-current overview of relevant literature and insightful philosophical commentary on it to the same end. She uses the term ‘loopiness’ as well. I remain neutral here on the degree to which there are “top-down” (that is, cognitive) effects, on perceptual processing.
example, many visual processes previously thought to be pre-attentive are now thought to be sensitive to attention. Visual attention has even been shown to affect the primary visual cortex (V1), which is widely regarded as pre-conscious. Artificial stabilization of the retinal image typically results in the fading of objects from view, rather than an enhancement in vision. Eye movements thus seem to be crucial to generating perceptual experience. Moreover, these eye movements are frequently endogenously caused. For example, eye movements are known to anticipate the motion of distal objects prior to smooth pursuit. This evidence suggests that perception is very much a process, one involving not only causal input from the environment, but causal feedback from the brain that substantially affects neural processing and bodily movements. Although of course the environment is significant among the causal factors that determine perception, once we take into account other factors there is no longer empirical support for a clear “outward-in” causal profile.

Relatedly, vision science has now characterized several activity-like processes inextricably related to perception. Visual attention—widely thought to be an activity or at least activity-like—plays such a pervasive role in visual processing that many researchers are losing interest in distinguishing between pre-attentive and attentive visual processes. Additionally, there is some reason to think visual object tracking is a precondition for experiencing objects as having properties at all. Visual object tracking is phenomenally conscious, and primarily characterized in terms of how the perceiver is engaging with the object (that is, tracking it). It is thus very plausibly a kind of psychological activity in the sense articulated above.


The considerations just presented put pressure on the view that causal differences between perception and action motivate distinguishing a kind of perception that is receptivity from the environment as opposed to engagement with it. Although more needs to be said here to definitively show that perception is an activity in the sense I have articulated, I hope to have demonstrated this idea’s serious plausibility. In the remainder of this section, I will put this conception of perception as an activity to work, showing how it can illuminate perception’s key features in a distinctively perception-first way.

In section I.2, I will show how taking perception to be an activity with an aim helps us to apply a competence framework to it, and strengthen the approach by unifying it with knowledge-first virtue epistemology. In section I.3, I will show how we can use the competence framework to understand the directedness of perception as practical rather than representational. In section I.4, I will put all of the pieces together and show how the account explains why we perceive objects as having properties, and thus why perception has accuracy conditions.

I.2. Perception Is a Manifestation of Competence. Perception is not just an activity: it is an achievement.27 First of all, it is factive. If you perceive a dog, then there is a dog there in front of you. Moreover, if you perceive something to be a dog, then there is a dog in front of you. You cannot see a wolf to be a dog. (Although you can see it as a dog, in which case you are having an illusion, not fully perceiving. More on this in section II.)

Perception, however, does not just require certain things in the world to be in a certain way; it requires perceivers to be related in a certain way to those things. There can be cases of what are called veridical hallucinations, where things perceptually seem to you to be a certain way, they in fact are that way, but you do not perceive them to be that way. For example, consider the following case:

Stephanie’s Puppy. Stephanie’s new puppy has been giving her a headache. She reaches for pain killers but her friend Wendy, knowing how trying it is to have a new puppy, decides to play a trick on her, replacing her pain killers with pills that make one hallucinate black and white dogs. Stephanie takes a pill, which causes her to have a perceptual experience as of a black and white dog on the floor before her. In fact, there is a black and white dog on the floor before her. (Her puppy is black and white.)

27 Several people including Fodor (see epigraph) and Gibson (The Ecological Approach to Visual Perception, op. cit.) have used the term ‘achievement’ to characterize perception. Here I will give it a precise meaning. This meaning contrasts with the way some other theorists use the term. For example, Gwen Bradford, Achievement (Oxford: Oxford University Press, 2015), uses ‘achievements’ to denote, roughly, things we do that involve difficulty. Being an achievement in my sense is neither necessary nor sufficient for being an achievement in her sense, or vice versa.
Veridical hallucinations are plausibly structurally analogous to Gettier cases, where one has a justified true belief that falls short of knowledge, and also to deviant causal chain action cases, which are typically described as cases where one has an intention that brings about its own satisfaction, but nevertheless the agent does not act intentionally. All three cases—perception, knowledge, and action—not only require the world to be a certain way, they also require the subject to bear the right relation to those features of the world. Let us use the term achievements to apply to such cases. 

Although traditionally these problems have been treated largely in isolation from one another, and the problem of veridical hallucination has received much less attention than the Gettier problem or the problem of deviant causal chains, it is reasonable to employ the same sort of explanatory strategy for all three kinds of achievement. Those who are motivated by Gettier cases to take a knowledge-first position (as many are) should, ceteris paribus, be motivated to take a perception-first position as well.

In other work, I use Gettier cases to motivate a knowledge-first virtue epistemology. I argue that Gettier cases arise for theories that try to reduce knowledge to other epistemic states because the stable features that explain knowledge cannot be specified independently of knowledge. Knowledge is a manifestation of a competence to know, not to believe truly. Taking knowledge to be first in this way, I then develop an account of competences to explain features of knowledge and its relationship to other epistemic and doxastic phenomena, such as justification, rationality, and belief. The Competence View employs the same general strategy and account of competences as my epistemic theory (although as we will see it is far from a mere transposition of it). In doing so, both views are strengthened, by serving as parts of a unified account of achievement.

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28 See chapter 1 in Ernest Sosa, *Judgment and Agency* (New York: Oxford University Press, 2015), for the same claim and an equally general attempt, although I do not endorse his particular proposal.

29 Timothy Williamson, *Knowledge and Its Limits* (New York: Oxford University Press, 2000). Williamson argues that knowledge is the most general factive mental state, and that perception (at least perceiving-that) is a kind of knowledge. However, if I am right, there are a variety of different achievements (relational factive mental states). We need not assimilate one to the other. Instead, we can explain them all using the same kind of competence-theoretic framework.


31 I also intend the general framework to be applicable to action. As I am claiming that perception is a kind of activity with an aim, it should be clear from what follows roughly how that goes.
Here is the account of competences that I use in the epistemic case, generalized:

1. Competences are competences to achieve (to perceive, know, act).
2. Achievements are by nature characteristic exercises of competences (manifestations).
3. Competences are essentially reliable but typically fallible: They reliably issue in manifestations, but often can issue in degenerate exercises.
4. Degenerate exercises of competence are constitutively failures to achieve.

We will be concerned with degenerate exercises, and so with the fallibility of competences, in section ii. For now we will focus on what the account says about the relationship between achievement and competence. As opposed to standard accounts that try to use competences in reductive analyses of achievements, this account of competences is designed to take achievements first. On this approach, achievements and competences are metaphysically interrelated. One cannot explain what it is to have the relevant competence without explaining what it is to perform the corresponding achievement, and vice versa. One cannot explain in virtue of what an agent achieves without explaining in virtue of what she possesses a competence for achievements of that kind, and vice versa.\(^{32}\)

In the perceptual case, this means that we have competences to perceive—not (just) to veridically represent—and perception is by nature a manifestation of this competence.\(^{33}\) Perceptual competences do not serve in a reductive analysis of perception, although they are

\(^{32}\) Readers familiar with O’Regan and Noë, “A Sensorimotor Account of Vision and Visual Consciousness,” op. cit., will now see a stark dissimilarity. While O’Regan and Noë claim that perception is a manifestation of know-how (and so plausibly competence), they claim that perception manifests practical knowledge of sensorimotor contingencies. While I think they are correct that possession of perceptual competence requires that visual systems be responsive to sensorimotor contingencies, our competences to perceive are not exhausted by such responsiveness. Indeed, a central point of the present project is that we can illuminate perception and the scientific inquiry of it without trying to give an analysis of perceptual competence at all. Moreover, information about sensorimotor contingencies is not possessed by the person (but rather by the visual system), and so does not qualify as genuine knowledge (that or how).

\(^{33}\) This account bears similarities to Tyler Burge’s view. Burge, *Origins of Objectivity*, op. cit., denies that there is any such phenomenon as veridical hallucination, claiming that cases of veridical representation entail that the perceiver perceives the object (ibid., p. 381). He also claims that what it is to be a perceptual representational state is to be an exercise (realization) of a capacity to veridically represent (ibid., p. 379). A detailed discussion of Burge’s view is beyond the scope of this paper, but I will point out a key difference. Burge tries to explain perception as veridical representation, while I do not. Representation plays no role in the account of perceptual competences or in the key features of perceptual activities. The account I introduce below will be more parsimonious, as we shall see.
central to its nature. A better understanding of perceptual competences, their features, and in virtue of what we possess them will be critical to progress on understanding the core features of perception and in virtue of what we perceive. At the outset, this can seem to make the challenge for understanding perception even greater, but it actually helps the perception-firster make progress in a variety of ways. To see this, let us turn to the question of how perceptual directedness might be practical, to see how taking perception to be a manifestation of competence can help clarify and motivate that proposal.

I.3. The Practical Directedness of Perception. If what I claimed above about achievements is in general correct, we have independent reason to reject the idea that activities must inherit their directedness from the representational states that cause them. It is plausible that, no matter what relation between such a state and its satisfaction is proposed, we will be able to come up with a deviant causal chain counterexample to the analysis. That is, we will be able to find cases where the subject has the aim (because she is in the right conative representational state), her aim is satisfied, but she did not act with the aim in the right way. Thus the same worries that motivate the kind of competence-based approach to perception I am advocating here also motivate developing an alternative account of the directedness of perceptual activities. Acting with an aim is plausibly psychologically basic, at least in many cases.

In developing an alternative, let us start by considering an approach to directedness that is shared among many representationalists. It is common to hold that a certain kind of reliable connection between organisms and environments establishes the directedness of certain states; in other words, we perceive and think about what we do because we are reliably related to our environments. For example, consider Jerry Fodor’s asymmetrical causal dependence account of mental representation, on which a symbol represents the presence of a certain feature only if it tends to be tokened by that feature. Only because a certain mental symbol tends to be tokened by dogs, say, does it represent dogs at all. That is, the very facts that make the mental symbol “dog” represent the presence of a dog also make it the case that tokens of “dog” reliably veridically represent the presence of a dog. On this
kind of approach, the facts that determine directedness do so only because they also determine a high probability of success. Regularities between cognitive systems and environments not only explain how such symbols reliably represent features of the environment; they also explain what it is for such symbols to represent in the first place.

This basic reliabilist strategy need not be thought of as particular to representationalism. As an idea for a naturalistic account of directedness, it works equally well for states as for events, and so for practical as for representational directedness. Competences are as a matter of their nature reliable. That is, exercises of competences are as such likely to accomplish what the competence is a competence to do. (One may have an ability or capacity, in contrast, if it is merely possible that an exercise of the capacity will issue in an accomplishment.) In the case of interest here, this means that perceptual competences reliably issue in cases of perceiving things as they are. If it is plausible that such regularities might give rise to representational directness, why should this not also be true for practical directedness?36

By applying this naturalistic strategy to the practical case, we can plausibly understand the directedness of perception without appeal to perception’s being, or being caused by, an inner mental representation. The very facts that determine perceptual competence possession also determine the directedness of its manifestations. An agent perceives a target with the aim of doing so—is related to an object as her perceptual target—because she manifests a competence to perceive.

I.4. Perceiving Things to Be a Certain Way. What about the fact that we not only perceive objects, but we perceive them to be certain ways? Even if the above account of the perceptual relation to objects is plausible, if the Competence View cannot explain how things perceptually seem to us, it will not be a viable alternative. Again competences can help, but it will also be useful to invoke a model for thinking about perception. It is popular to use demonstrative thought as a model for understanding perception (“that dog,” “this color”); instead I will use indexical thought (“here,” “now”).37

36 A caveat is in order here: although I share the reliabilist’s most general commitments, I will make several departures from the reliabilist representationalist view. These will be explicitly discussed in the next section.

37 For examples of the use of demonstrative thought as helpful for understanding perception, see McDowell, Mind and World, op. cit.; Burge, Origins of Objectivity, op. cit.; Martin, “Particular Thoughts and Singular Thought,” op. cit.
In particular, Hector-Neri Castañeda, Gareth Evans, David Kaplan, John Perry, and others have provided us with a way of understanding indexical concepts that is useful here. Although the focus of discussions of indexicals was often on the semantics of indexical expressions, all of these theorists paid considerable attention to indexical thoughts, and how to best characterize their cognitive significance. According to these theorists, indexical concepts pick out particular objects in a way that systematically depends on the context of thinking. For example, *here* thoughts pick out the place where the thinker is doing the thinking. However, in thinking *here* thoughts, one is not thinking of a place as that satisfying some description (the place of the thinking). Rather, the way in which one thinks about the place where one is when one thinks a *here* thought is inherently context-sensitive. We must understand indexical thoughts on their own terms. As Castañeda writes when talking about paradigmatic uses of ‘he’ in expressions such as ‘Dan knows that he has a wonderful dog’:

... they constitute a peculiar and irreducible mechanism of reference to persons.

Here I pull out one particular strand of their thinking, focusing on Kaplan’s work for the sake of simplicity. Kaplan made a distinction between demonstratives, which he took to have a descriptive element, and indexicals, which he took not to. Instead, indexicals merely have a *character*, which plays both a metasemantic and a psychological role. The character of ‘*here*’, for example, is a function from the context of utterance (or thinking) to the place of the utterance. The content of an indexical is just the thing determined by the character of the indexical on the occasion of use (that is, a particular place). However,

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40 There is much, much more to say here, but I hope that the considerations I present here will be enough for the current purpose of initially motivating the view.

41 Kaplan places ‘he’ on the demonstrative rather than the indexical side of the divide. My main cases are ‘*here*’ and ‘*now*’, which all theorists in this debate agree are indexicals rather than demonstratives.
the character also determines the perspective of the person on that object directly, without making further contributions to the content:

The character of ‘I’ provides the acknowledged privileged perspective [of the thinker on herself], whereas the analysis of the content of particular occurrences of ‘I’ provides for (and needs) no privileged pictures.42

A straightforward, but under discussed, reading of this idea is as follows. When one thinks of a place as here, one thinks about it in some sense as the place where one is—not because one attributes being the place where one is to the place one is thinking of, but because those are the features of the object in virtue of which one is thinking about it at all.

I say ‘in some sense’ because when we think here thoughts, the sense in which we are perspectively sensitive to self, place, and time are not separately articulated (more on this in a moment).43 Still, here thoughts involve a perspective on our locations in a way that rationalizes thoughts about the place where one is for a subject with these more sophisticated capacities. I think this kind of perspective is basic. There are no further articulable components in one’s here thoughts. We should take care to remember that whenever we are articulating the aim of perception using predicates or descriptions, we are in an important respect distorting the phenomenon.44

The Kaplanian suggestion, then, is that the reference-determining role and the psychological role of an indexical’s character are deeply connected. The metasemantic features of indexicals—what makes the subject think about the object at all—directly determine the psychological properties of occurrences of thinking, that is, thinking about


43 Some theorists have recently speculated that here thoughts need not involve perspectival sensitivity to self (Christopher Peacocke, The Mirror of the World: Subjects, Consciousness, and Self-Consciousness (Oxford: Oxford University Press, 2014); Christopher Peacocke, “The Nature and Role of First and Second Person Content,” Analysis, lxxvi, 3 (July 2016): 345–54; Susanna Schellenberg, “De Se Content and De Hinc Content,” Analysis, lxxvi, 3 (June 2016): 334–45). I disagree, but someone who accepts their view can accept the connections between indexical reference and perception I am advocating here mutatis mutandis. The view is meant to apply equally well to perception of objects as having subject-independent properties like being square. I should say, however, that some of the reasons to resist the claim that here involves perspectival sensitivity to oneself do not apply to the current proposal. The way in which the self figures psychologically is not as a separately articulated representational element. The capacity to think here thoughts, on my view, does not entail the capacity to self-represent, conceptually or nonconceptually. The self figures only as part of the way in which one thinks about a place because of its metasemantic role.

44 Peacocke, The Mirror of the World, op. cit., pp. 8, 80–86, makes a similar point about the de se. The determination of reference does not go via a description like the thinker of this thought. Still, in characterizing the Kaplanian insight I want to work with here that links the metasemantic features of a term to its perspectival significance, the best we can do is to use our concepts to describe the relevant metasemantic features.
the object as having certain features. The characters of indexicals (functions from contexts to objects) can describe characteristic psychological properties of indexical thoughts because they characterize their metasemantic properties, and the latter are constitutive of the former. No extra attribution or representation of properties needs to be posited.

Using competence terminology to describe these primitive mechanisms of reference, we may think of characters as characteristic descriptions of competences. They explain what the competence is a competence to do, and also help to characterize the way in which the agent relates to the object. We may say, then, that on the approach to indexicals we have been considering, the manifestation of a competence to think thoughts about the place where one is thereby has as its manifestations cases of thinking about the place where one is as such.

The Competence View can apply this idea in a straightforward way. What it is to perceive a thing to be of a certain kind is to manifest a competence to perceive things of that kind. As long as this is plausible for the indexical case, it should be plausible for the perceptual one. We can thus suppose that the regularities that make it the case that the perceiver engages with an object as the target of her perceptual activity—that she perceives it with the aim of doing so—also determine further features of the aim and activity of perception. In manifesting a competence to perceive objects of a certain kind, the perceiver aims to perceive an object of that kind.

As with the indexical case, there are difficulties with expressing in natural language what having such aims, and engaging with objects in such ways, is like. As we are modeling the directedness of perception on that of indexicals, we should take care to remember that whenever we are articulating the aim of perception using predicates or descriptions, we are in an important respect distorting the phenomenon. The English language gives us ‘I’, ‘here’, and ‘now’ to express these ways of thinking about objects, but it does not give us such informative expressions of perceptual directedness. (Think about all the terms we would need!) Thus we can talk about here thoughts, and aim to talk or

45 The account also leaves open the possibility that, for example, pure (non-directed) phenomenal redness is experienced solely in virtue of “in the head” non-mental facts. There is no reason why sub-personal cognitive features in virtue of which the subject possesses and manifests a competence to perceive may not also make a difference to the qualitative character of her perception. Thus the possibility of inverted color spectra (Block, “Inverted Earth,” op. cit.) does not present a difficulty for the view.

46 Which kinds of objects are the targets of perception? That is largely an empirical question, one that does not affect the core framework put forward here (just as it does not affect the core representationalist framework).
think about \textit{here} (as such), whereas we do not have such language available to describe our perceptual engagement. This linguistic barrier poses no barrier to understanding the proposal, as long as we keep in mind that the locutions ‘perceiving \( o \) to be F’ and ‘aiming to perceive \( o \) (an F)’ are to be understood as describing a unitary phenomenon with a single target, \( o \), on par with our relations to what we think about indexically.\footnote{The Competence View is, in a clear sense, a nonconceptual account of perception. A standard (and plausible) way of understanding this claim is that perception does not involve \textit{predication} of the kind thought involves. (For example, Evans, \textit{The Varieties of Reference}, op. cit.; Wilfrid Sellars, \textit{Empiricism and the Philosophy of Mind} (Cambridge, MA: Harvard University Press, 1997); McDowell, \textit{Mind and World}, op. cit.) The capacity for predication, as it is operative in occurrent thought, seems to be too sophisticated to be operative in perception, which infants and non-human animals can have. Predicating F-ness of an object also seems to require that one be able to independently identify the object in question, whereas in perception it seems that the properties one sees an object as having are integral to one’s identifying the object (seeing it). Burge, \textit{Origins of Objectivity}, op. cit., argues for this in detail, but supposes that there is a kind of non-predicative representational attribution that occurs in perception. I am doubtful that there is such a thing.}

One might worry that invoking indexical thought as a model for perception will allow implicit appeal to mental representations to creep back in, threatening the Competence View’s claim to be a non-representational account of perception. I take it to be an open question, undecided by Kaplan’s or others’ discussions of the features of indexical thought that I am appealing to here, whether indexical thought is better construed as an activity or as a representational state.\footnote{The latter is often assumed and rarely argued for. The reader may guess what my position on this issue is.} As long as I can plausibly frame the features of indexicals I will appeal to in a way that is appropriate for mental activities, I think it is legitimate to appeal to indexical thought as a model for perception. Note that nothing in the above description of indexicals involves appeal to representation.\footnote{Ruth Millikan, “The Myth of the Essential Indexical,” \textit{Noûs}, xxiv, 5 (December 1990): 723–34. Her objections to suggesting that study of indexical expressions can help to illuminate indexical thought are particular to a representational account of thought, and so do not touch the project here.} If anything, the description fits neatly into the kind of competence framework I have been providing for perception. It is plausibly because the agent has a competence to think about the place where she is that when she manifests that competence she thinks about the place where she is as such, that is, as \textit{here}.

Moreover, this proposal fits well with the considerations about the directedness of perception presented thus far. I have supposed already that the regularities between the agent and environment that
determine competence possession thereby determine the directedness of its manifestations. In order to have a competence to perceive Fs, there must be appropriate regularities involving the agent and the Fs. Otherwise, the agent would not be competent at perceiving Fs. The appeal to indexicals here is not an independent consideration, but rather serves to motivate the idea that manifestations of competence could have as their only targets of perception the objects perceived, even though competences do manifest in cases of perceiving an object to be a certain way.

The Competence View thus explains the two key aspects of perceptual directedness by taking perception to be an activity that is a manifestation of perceptual competence—the agent perceives objects because they are the targets of her perceptual activity, and she perceives them to be certain ways because she manifests competences to perceive objects of certain kinds. This characterization of the nature of perception does not appeal to representational explanatory tools.

Although the theory does not invoke representational tools in order to explain the nature of perception, it can straightforwardly show why perception has accuracy conditions. Manifesting a competence to perceive F things with respect to o is a matter of perceptually engaging with o as an F, that is, perceiving o to be F. Because of the metasemantic–psychological connection drawn above, that o is F is both a necessary condition of perception and a way of describing how the world perceptually seems to the subject. That o is F is thus the accuracy condition for a manifestation of a competence to perceive Fs with respect to o. The Competence View can provide, then, well-motivated accuracy conditions on perception, even if these are not used in order to explain perception’s nature. I am happy to call these accuracy conditions the contents of perception, as long as we keep this in mind.

Interestingly, however, the perceiver’s perspective is not quite exhausted by its accuracy conditions. It is part of the idea that perception is a matter of practical directedness that one is engaging with the object as agent, in this case as perceiver. That is just as much a part of the manifestation of competence as the characterization of the kinds of things one is manifesting a competence to perceive. We can thus distinguish between the accuracy conditions of perception—how perception presents the world—and the total perceptual perspective.

\[50\] Fodor was interested in predicates, but there is no need to restrict our interest to predicates. Indeed, I think predicates are much more complicated than perceptual directedness or indexical thought, but cannot go into that here.
To see how this might be helpful, let us briefly examine a recent discussion of the extent to which the subject figures in her own perceptual perspective. There is an inherent tension which Naomi Eilan brings out nicely. On the one hand, the subject seems in some sense to be implicated in the perceptual experience. It is natural to describe an experience as one of seeing a tree on my left. After all, perception of a tree to the left does typically rationalize beliefs such as “I am seeing a tree on my left.” On the other hand, it seems equally patent that perception is in no sense about the perceiver. It is about the world. Eilan takes the latter intuition to have more force than the former, opting to explain how beliefs about oneself are rationalized by experience in some other way.

Peacocke takes a different approach, and distinguishes perceptual referents from the broader class of intentional contents. The idea is that the only object one perceives is the tree, even if one perceives it as to the left of me and so represents oneself in perception. One can accept the general point and still wonder (i) whether this move over-intellectualizes perception, and (ii) whether it really respects the phenomenology of perception. Does perception—even the kind that beings with conceptual capacities have—involves taking any kind of perspective on oneself? Again, perception generally does not seem to be about the perceiver.

If we shift from thinking about representational contents as the primary explanatory characterization of perception to thinking about perception as an activity, I think we can make progress. We want a conception of the perceptual relation on which the self is not an object in any sense, but which makes it clear how the self could be necessarily implicated. Performing with an aim is inherently a perspectival phenomenon, one which involves the agent as such. Perceiving an object, then, is inherently perspectival in this way. What the agent is directed toward is the world, but the character of that directedness inextricably involves the perceiver as such, not as (even an intentional) object, but as agent. Thus the correct characterization of the subject’s perspective involves the agent, even though the accuracy conditions need and typically do not.

This way of thinking about the total perceptual perspective has a number of benefits. First, we need not commit to any distinct ability to

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52 This is sometimes called the “transparency” of perception, and Hume is commonly invoked in support of this thesis. Eilan, “You Me and the World,” *op. cit.*, p. 315, invokes Evans, *The Varieties of Reference*, *op. cit.*, p. 232, as additional support.
represent oneself (conceptually or nonconceptually) in order to explain perception generally. Thus we do not open ourselves up to over-intellectualization charges. However, we can nevertheless capture the intuition that the subject figures into the phenomenology of perception, and that (for a sufficiently sophisticated subject) how she does so makes certain de se beliefs rational for her. One’s knowledge that one perceives a tree is on this account a kind of knowledge of what one is doing, following Anscombe, rather than knowledge derived from the self being represented in the content of perception.54

I hope to have demonstrated here that there can be a substantive, clearly perception-first account which plausibly explains the nature of perception and its key features. Perception, on this view, is a kind of activity, a manifestation of a competence to perceive. I have shown how the view plausibly explains perception’s characteristic qualities, and how it might plausibly be perceptually and mentally basic. It remains to show how the Competence View can satisfy the second and third explanatory criteria.

II. THE DEPENDENCE OF HALLUCINATIONS, ILLUSIONS, AND EXPERIENCES ON PERCEPTION

We want to understand how hallucinations and illusions metaphysically depend on perception, and how appeal to perception can explain their distinctive features. Most importantly, we want to understand how hallucinations and illusions can be subjectively indiscernable from cases in which we perceive things as they are without positing perceptual experiences that determine the qualitative character of both cases.55

Existing accounts have serious difficulty with this explanatory criterion. Not only do they fail to explain hallucination and illusion in terms of perception, but their accounts of the qualitative character of perception seem to preclude any plausible account of their indiscernibility from perception. On the most standard perception-first view, the qualitative character of perception—how things perceptually seem to the perceiver—is constituted by features of the perceptual scene itself.56 If this is so, then how could there be any qualitative character in cases of hallucinations and illusions at all?57 In these cases,

54 Anscombe, *Intention*, op. cit.
55 I will take it for granted here that it is possible that hallucinations and illusions can be subjectively indiscernible from cases of perceiving things as they are.
57 The view that qualitative character in paradigmatic cases of perception is constituted by the scene perceived is itself problematic for other reasons as well. For example, there is normal variation in color perception among normal perceivers. Claiming that
by definition one is not appropriately related to the perceptual scene, so the scene cannot constitute their qualitative character. Hallucinations must therefore have different qualitative characters (if any), or their qualitative characters must have radically different grounds, or we must try to explain indistinguishability without appeal to qualitative character at all (perhaps by appeal to epistemic features of the subject). Although I cannot discuss these various strategies in detail, I share the discontent that representationalists have expressed with existing proposals.  

However, the perception-firster has other options. Although we do not want to appeal to a common perceptual event to explain the possibility of indistinguishable hallucinations and illusions, it is open to us to appeal to another common feature, namely perceptual competences. Perceptual competence possession is a stable feature of the perceiver, not the kind of common mental event experience-firsters appeal to in their explanations. They are also individuated by the achievements they manifest in, namely, perceiving objects of certain kinds. Thus an account of illusion and hallucination in terms of their relationship to perceptual competences would be a perception-first account.

Investigating this possibility requires delving a little more deeply into the account of competences briefly explained in the previous section. What, exactly, does it mean for a competence to achieve to be fallible? What does it even mean for a competence to be reliable on this view?

II.1. Reliability and Degenerate Exercises. On the face of it, characterizing reliability for competences to achieve is a simple task:

**General Reliability Condition on Competences:** A competence to achieve is reliable just in case there is a high probability that if the

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competence is exercised (E), the agent will achieve (A) what the competence is a competence to do.

\[ \Pr(A|E) \geq n, \text{ for some sufficiently high } n \in (0, 1) \].

This is correct as a necessary condition on competences, but we cannot leave the matter here. We are trying to explain what perception and hallucination have in common in terms of what it takes to perceive, without positing an explanatory event in common, such as a neutral exercise of competence. As such, we cannot use exercises of competence in this way to explain what it is for a competence to be reliable. We have to go deeper, although any account we give should entail the above condition.

We can illuminate the reliability condition by appealing to the sub-personal features in virtue of which an agent manifests her competence. We can distinguish the occurrences that, on a particular occasion, against a background condition of possession of a competence to perceive \( F \), make it the case that a person perceives an \( F \). These conditions of course only make it the case that a subject perceives if the background regularities that make those particular occurrences constitute a manifestation of competence obtain, but there is no reason we cannot independently specify or characterize them. Let us call these conditions the \textit{manifestation conditions} of our competence to perceive \( F \).

The next step is to take seriously the idea of a \textit{basis} of a competence. These are the sub-personal cognitive (and perhaps bodily) mechanisms that have their seat in the agent, and that, when operative, partially constitute cases of perception. In other words, the operation of the basis of the competence is a proper part of the manifestation conditions of the competence.

Taking seriously the idea that competences have \textit{bases}, which are seated in the subject, merely requires taking seriously the idea that there is a genuine distinction between our sub-personal cognitive

\[ \text{For the sake of simplicity, throughout I am representing the threshold as a real number } n \in (0, 1]. \text{ This idealization will need to be compromised in various ways, but I do not think the points being made here will thereby require modification. Moreover, please note that I am appealing to objective conditional probabilities (such as those involving fair coins), but not assuming any theory of them.} \]

\[ \text{The account I invoke here is an application of a more general account of competences I develop in Lisa Miracchi, } \text{Getting Things Done} \text{ (Ph.D. Thesis, Rutgers University New Brunswick), and which I also apply to the case of knowledge in Miracchi, } \text{“Competence to Know,” } \text{op. cit.} \]

\[ \text{See Ernest Sosa, } \text{“How Competence Matters in Epistemology,” } \text{Philosophical Perspectives, xxiv, 1 (December 2010): 465–75, for discussion of the notion of the座位 of the agent’s competence, and its distinction from the shape of the agent and the situation the agent is in.} \]
systems and our environments, and that sub-personal neural processes are partially responsible for cases of perceiving. I mean the term ‘sub-personal cognitive’ to include any sub-personal, independently specifiable features that are typically appealed to in the explanation of psychological events: neural activity, information processing, computations, and other functional states and events. Although not universally accepted, this idea is widely held, and central to much work in cognitive science. The perception-firster can and should endorse the claim that these features can be characterized and have a substantial role to play in our theorizing about perception while still rejecting the idea that the operation of these sub-personal cognitive processes suffices for person-level perceptual states or events.62

We may now define our reliability condition as follows:

**The Competence View’s Reliability Condition on Perceptual Competences.** It is a necessary condition for possession of a perceptual competence that the probability that the manifestation conditions obtain (M) conditional on the basis of the competence being operative (O_B) be sufficiently high.

\[ Pr(M | O_B) \geq n, \text{ for some sufficiently high } n \in (0, 1). \]

According to this proposal, competences to perceive are at least in part established by probabilistic relations between the full events constitutive of perceiving on a particular occasion and their sub-personal cognitive proper parts, not by probabilistic relations among mental states or exercises of competence and the obtaining of some kind of independently specifiable success condition (for example, veridicality).

So far we have just further specified what it takes to perceive, and to possess and manifest a competence to perceive. Our reliability condition specifies at least one way in which perception and perceptual competence possession are metaphysically interrelated. Perceptual competence possession requires that the regularities constitutive of it involve manifestation conditions of a certain kind, namely those that against a background of competence possession could give rise to perception. Perception requires that the kinds of regularities just specified are in place. In doing so, however, we have acquired the tools that we need to explain what happens in cases of illusion and hallucination, and what they have in common with perception. This is

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62 We need not even hold that the operation of the basis of a perceptual competence could occur completely independently of the subject’s relationship to her environment. In paradigmatic cases of illusion, there is a perceptual connection between agent and object, light does hit the retina, there are normal ocular movements, and so on.
because we can now specify what it is for a competence to be degenerately exercised:

A competence to perceive is degenerately exercised just in case its basis is operative, but not all of the manifestation conditions obtain.

Perceptual competences, then, may have exercises that are constitutively failures to perceive, in addition to exercises that are constitutively cases of perceiving. The claim now is this: in a case where a subject’s perceptual competences are merely degenerately exercised, the subject fails to perceive any object, and so hallucinates.

If we now want to specify a perceptual event common to cases of perception and hallucination, we may do so. In both cases the perceiver exercises her perceptual competence. But rather than being the more fundamental event that explains perception and hallucination, exercise of competence is a disjunctive kind, metaphysically dependent on both of its disjuncts:

A competence to perceive is exercised just in case it is either manifested or degenerately exercised.

The Competence View has the result we were looking for, namely that its reliability condition on competences entails that exercises of competence are likely to be cases of perception. It does so without appealing to a unified kind, exercise of competence, as an explanatory feature of the theory.

At this point, the reader might feel as though a trick has been played. It may seem as if we have, without calling it so, appealed to the very event that the representationalist would say is the obtaining of the perceptual experience, and we have said that when this event occurs in bad conditions, the subject hallucinates. Why should we think of the operation of the basis of a competence as something sub-personal, rather than experiences of the sort that experience-firsters appeal to? There are two things to say here, although I will say more in section iii. First, representationalists make the commitment that states of the cognitive system which are independently specifiable as computational or neural states are identical to mental perceptual experiences. All I have

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63 By ‘disjunctive kind’, I mean a kind that is most perspicuously characterized by its disjuncts, membership in one of which is necessary and sufficient for membership in the disjunction. The term kind is applicable in cases where there are substantive, albeit less perspicuous or fundamental, characterizations of the kind (as there are in this case—see the discussion of qualitative character below). Thanks to Neil Mehta for pressing me to clarify this.

64 Thus, it will be an empirical matter exactly what the basis of a perceptual competence is.
done here is appealed to the states that they have supposed to be independently specifiable in non-mental terms. Thus the charge that I am surreptitiously appealing to mental representational states is unfounded. I am appealing to the same independently specifiable features of a subject’s sub-personal cognitive system, but proposing a different connection between them and mental events.

Second, if the worry about deviant causal chains discussed above is correct, we cannot explain achievements as the combination of neutral mental events and non-mental conditions. Supposing that the operation of the basis of perceptual competences is itself a mental event would merely result in positing two fundamental perceptual states rather than one. The more parsimonious approach, then, is to suppose that operations of bases of competences are not mental in their own right, and that it is cases of perception that are the only perceptually fundamental events. As long as we can explain what perception, illusion, and hallucination have in common without appeal to a more fundamental perceptual event that obtains in both cases, we should suppose that the operations of bases of competences are non-mental.

II.2. The Indiscriminability of Hallucinations. Now, how does this account of the nature of hallucinations as degenerate exercises of perceptual competences allow us to explain the possibility of their subjective indistinguishability from perception? Above, I claimed that when one perceives an object, the way in which one perceives it is determined by the perceptual competence one manifests. What one does when one perceives is engage with a particular object as the target of one’s perceptual activity, but the way in which one does it, including how one perceives that object to be, is determined by one’s perceptual competence.

This means that the account predicts, for example, that two manifestations of the same perceptual competence that have distinct objects as targets on the two occasions will fail to be subjectively discriminable from one another. This is so even though the states importantly differ, with the one object as the target in one case and the other as the target in the other. This difference does not provide the subject with any features to distinguish the two cases, because experience of features is completely determined by the perceptual competence.65

65 This is a welcome result, because typically views that respect the particularity of perception tend to use the features responsible for qualitative character (either the scene or the representational content) to explain the particularity. This raises concerns about their ability to handle the possibility of hallucinations that are indiscriminable from perceptions.
‘Qualitative character’ is something of a term of art, so it is important to clarify what I mean here. Explaining qualitative character in terms of how things seem to one, as is typically done, is insufficient for our purposes. In the case above, there is an important sense in which things do not seem to be the same in the two cases: one object, \( A \), seems to be \( F \) in the first case whereas a different object, \( B \), seems to be \( F \) in the second. This difference will be reflected in other psychological differences; for example, the first perceptual experience will (ceteris paribus) rationalize the belief of \( A \) that it is \( F \), whereas the second will not. Nevertheless, the perceiver in both cases perceives the objects to be \( F \); and her perceptual experience does not give her grounds for distinguishing the two objects or the differences in how she is related to her environment.

We want ‘qualitative character’ to pick out the sense in which things seem the same in these two cases, abstracting away from the important differences in their targets. In cases of hallucination, no thing seems to have certain features. Nevertheless, there is a broader sense in which things seem to have the same features.66 Moreover, in cases of hallucination, it is as if one were perceiving an object, and it is as if that object had certain properties. Plausibly this broader sense is what we want in an account of qualitative character, because only this sense is relevant to the indiscriminability of hallucination.

The Competence View can explain how it is possible for hallucination to have the same qualitative character as perception in this sense, and so how it might be indiscriminable from perception, without positing a common mental event in the two cases that is responsible.67 In the cases above, the activities are inherently different: one is a

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66This observation has traditionally led representationalists to suppose that the content of perception is existential: that is, of the form there is an \( x \) such that \( x \ldots \). As has been well discussed, there are problems with this construal, not least of which that how things seem is still particularized in cases of perception. See Susanna Schellenberg, “The Particularity and Phenomenology of Perceptual Experience,” Philosophical Studies, cxxix, 1 (May 2010): 19–48, for discussion.

67Schellenberg, “Perceptual Content Defended,” op. cit., invokes structured content to explain how perception can present a particular object, and yet have a qualitative character that one could also have in cases of hallucination. This structured content consists of modes of presentation as well as objects and properties. The modes of presentation explain qualitative character, while the objects and properties explain particularity. In cases of hallucination the contents are “gappy,” consisting of modes of presentation but lacking objects and/or properties. Burge, Origins of Objectivity, op. cit., also invokes this kind of structured content view, with some representational contents particular to cases of perception and others that also occur in cases of hallucination and illusion. While I have worries about these positive proposals, I will only note here that the Competence View provides a more parsimonious, less theory-laden account of the relation between perception and hallucination, and for that reason deserves to be taken seriously. Again, my aim is not to show that the Competence View is superior here, but rather that it is a viable contender.
perceptual engagement with $A$ and the other is a perceptual engagement with $B$. Nevertheless, because the features $A$ and $B$ are perceived to have are determined by the competence manifested, both events have the same qualitative character.

If the features things perceptually seem to have are determined by one’s perceptual competence in cases of manifestation, why couldn’t this also be so in cases of degenerate exercise? If this hypothesis is correct, then we can explain how hallucinations can have the same qualitative character as certain cases of perception. Taking seriously the idea that hallucinations are degenerate exercises of competence helps us to make the case. If a degenerate exercise is a genuine perceptual activity, then the agent will need to have a perceptual aim in performing it. And what aim would the degenerate exercise have, if not to achieve what its competence is a competence to achieve?

This would make degenerate exercises of perceptual competences failures in a deeper sense than we have yet established. Degenerate exercises are inherently cases of aiming to do one thing and yet doing another. In the case of a degenerate exercise of a competence to perceive $F$s, the agent aims to perceive an $F$, but does not do so. This account of degenerate exercises of perceptual competence reinforces the claims made in the previous section: that perceptual activities involve aims in a way that goes beyond mere third-personal appraisal. Even in degenerate cases the subject engages in a first-personal, directed way with her environment. It is just that the way she interacts with her environment is inherently a failure, rather than an achievement.

Now, we must be careful here. There is a sense in which cases of perception and hallucination have the same aim, and a sense in which they do not, which corresponds to the distinction we have made between the agent’s directedness in the full sense and the qualitative character of the perceptual event. In a case of perception, the perceiver aims to perceive a particular object, and she achieves her aim. In cases of hallucination, the perceiver fails to perceive any particular object. Thus possession of the kind of determinate aim the perceiver has in cases of manifestation is unavailable to the hallucinator. As discussed above, however, differences in what is perceived need not make a difference to what features things seem to have.

It is more plausible to think about the determinate aim in cases of hallucination as inherently unachievable. The perceiver does not aim to perceive some $F$, but rather a particular one. Yet there is no

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68 This is important for explaining the particularity of the phenomenology of hallucination. See Schellenberg, “The Particularity and Phenomenology of Perceptual Experience,” op. cit., for discussion.
particular object of which we can say that it is the object the per-
ceiver aims to perceive. The determinate aim is not the sort of thing
that might be accomplished on another occasion. It is inherently
defective.

This point allows us to see that, although the Competence View can
provide accuracy conditions for cases of hallucination as well as per-
ception, there is no common condition to which a particular content is
added in the good case. The accuracy conditions of hallucination are
general: if one degenerately exercises a competence to perceive $F$,
there is a sense in which perception still presents the world as though
there were an $F$, and so there is an $F$ can be considered an accuracy
condition on the experience. However, this is an incomplete charac-
terization of what is required for perceptual success because the per-
ceiver is inherently failing to be perceptually related to a particular $F$,
not making a general claim. Thus this accuracy condition is merely an
abstraction from the perceptual event.

It is worth pointing out at this stage that this kind of view has been
defended for indexicals as well. Gareth Evans describes cases of failed
here thoughts as follows:

If, for example, the subject is moving, unbeknownst to himself, so that
there is no place which he is disposed to treat as the object of his thought,
then it will be quite impossible to excogitate out of, for instance, his
gestures, any intelligible thought content for the ‘here’ thoughts he
essays.69

For Evans, in cases where the thinker is unlucky placed in an
environment where she is unaware of her movement, she merely
“essays,” or attempts, here thoughts. Evans argues that in such cases
the thought has no content, not even a description that could in
other circumstances determine a place. The kind of “thought” one
has when one fails to have a normal here thought is not the kind of
thought that on another occasion could refer, denote, or enter
into a true judgment. It is inherently defective, because one is not
appropriately related to one’s situation. It is inherently a mere
attempt.

Of course appeals to what others have said about indexical refer-
ence only go so far. The main point here is that modeling perception
on indexical thought plausibly extends to the degenerate case, where
one merely attempts at securing an object of perception, but does not
do so.

In order to explain the sameness of qualitative character in cases of perception and hallucination, then, we need not establish that the hallucinator has exactly the same aim as the perceiver, nor that there is a common activity which explains the common features of their aims. The sense in which perceivers have the same aim in cases of perception and hallucination is an abstraction from the determinate ways in which perceivers and hallucinators engage with their environments. They are related to their environments in different ways—the first as perceiving o (to be F), the second as failing to perceive a particular F. There is no aim common to the two cases which is separable from the achievement or the failure. Nevertheless, by understanding how features of the subject’s perceptual engagement are determined by competence possession, we can understand how these two kinds of engagement can have some of the same features—indeed, precisely the ones responsible for indiscriminability.

At this point, we should return to a claim I made in the previous section, namely that we can appeal to the insights of reliabilist representationalists in motivating a naturalistic practical account of perceptual directedness. We must now discuss an important difference between the Competence View and reliabilist representationalist accounts that I have so far left implicit. The reliabilist representationalist sets up her reliability conditions between the tokening of a representational vehicle and certain conditions obtaining, by which the vehicle thereby comes to have those conditions as its representational content. Directedness on this view is in the first instance a property of the representational vehicle, and the kind of directedness it has is common to both cases of success and failure.70

In contrast, we have set things up so that the reliability conditions are between the full manifestation conditions of the competence and the operation of the basis of the competence, so that the full manifestation conditions, not the operation of the basis, is the mental, directed event. In the case of degenerate exercises, it is again the full conditions—the operation of the basis in conditions that deviate from manifestation conditions—that is the mental, directed event. It is important, then, to defend the appeal to the reliabilist approach, since I have clearly departed from its standard formulation in a substantial way.

70 See, for example, Dretske, “Misrepresentation,” op. cit.; Fodor, Psychosemantics, op. cit.; Millikan, “Biosemantics,” op. cit.
As I see it, the insight of the reliabilist is that a naturalistic account of directedness will need to appeal, not just to occurrences on a particular occasion, but also to the regularities that are the background against which occurrences obtain. This idea is independently plausible: only because the world is organized in certain regular ways can mental features emerge from a non-mental world. No particular non-mental occurrences on their own have features sufficient for mental occurrences. Rather, mental occurrences are a product of non-mental occurrences’ participation in complex systems and regularities.

In recent work, however, this insight has been explored in the context of an assumption perception-firsters should reject, namely that understanding how there can be certain kinds of failure is more important than, and prior to, understanding how paradigmatic achievements can obtain. This commitment is deeply held and widespread in naturalistic theorizing about intentionality. As a characteristic example, consider how Fred Dretske opens his seminal 1986 paper “Misrepresentation”:

Epistemology is concerned with knowledge: how do we manage to get things right? There is a deeper question: how do we manage to get things wrong?71

This prioritizing of failure in an account of directedness leads us to look for fundamental mental events which can be failures. Achievements of course are not candidates for such events. Thus states that are neutral between achievement and failure look like the only viable option. In the context of this commitment, one will look for a kind of directedness that these neutral states can have (that is, representational content) and for regularities that will give these neutral states such directedness. Rather than being an inherently plausible feature of the idea that a naturalistic account of directedness will need to appeal to stable regularities between the subject’s nervous system and her environment, the standard approach is just a plausible way of doing so that satisfies this other theoretical commitment. If this diagnosis is correct, and the appeal to regularities in explaining directedness is independently plausible, then we should feel free to adopt it in a way that does not assume that the fundamental directed events are compatible with failure. This is what I have done here. If the events that are mentally and perceptually primitive are achievements, then it is these events that must have their directedness determined by regularities involving them.

71 Dretske, “Misrepresentation,” op. cit.
Degenerate exercises, of course, do not have characteristic regularities involving them—indeed, they are inherently unlikely to obtain, given that the basis of the competence is operative. We thus cannot provide the same kind of explanation for their directedness as we can for the directedness of perception. However, we do not want to. Remember that the perception-firster wants to explain the nature and distinctive features of hallucinations and illusions in terms of their relation to perception. We thus do not want to explain the directedness of hallucination on its own terms, but rather in terms of hallucination’s nature as a failed perceptual engagement. I have done this here. Appeal to the regularities involving perception explains why in cases of degenerate exercise one aims to perceive, but deviation from the kinds of occurrences in those regularities explains why the kind of activity is inherently a failure, why the kind of determinate aim degenerate exercises have is inherently unachievable.

To summarize: cases of hallucination can be indiscriminable from cases of perception because they are degenerate exercises of competences to perceive. Although perception and hallucination are different kinds of perceptual activities, there is a level of abstraction at which the agents have the same aim: perceiving an $F$. This explains why things (in the general sense) seem to have the same features in both cases. Which features things seem to have in both cases is determined by the competence exercised, despite the fact that the exercises are importantly different in kind.

II.3. Illusions. What about illusions, then? How can the Competence View explain cases where we perceive things, but not as they are? When one perceives, typically one perceives an object as having many properties it in fact has. Importantly, the facts in virtue of which one perceives objects as having these properties are not all on a par with one another. For example, one might see something as red and see something as crimson, but the facts that make it the case that one sees it as red depend on the facts that make it the case that one sees it as crimson. In general, some properties of a thing may make a difference to one’s perceptual engagement with it but only in virtue of others of its properties making a difference to one’s perceptual engagement with it.\textsuperscript{72} Certain perceptual competences are dependent on others in such a way that they involve the same object as the target when they are manifested.

\textsuperscript{72} The dependency of competences to perceive on other competences to perceive may or may not track the metaphysical dependence relations among the properties exploited by the competences.
There thus arises the possibility that certain more fundamental aspects of one’s perceptual engagement might secure an object as the target of one’s activity, even while the manifestation conditions of more sophisticated perceptual competences which depend on this more basic engagement for their manifestation fail to obtain, and so these competences are degenerately exercised. In such a case, the target of the perceiving is secured, even though more sophisticated competences are not manifested. These are cases of perceptual illusion.

Here is an example. Suppose that what seems to one to be a bird of prey is actually just a toy airplane in the distance. In this case, one has a perceptual illusion as of a bird of prey. One sees the airplane, but does not see it as it is. Still, one does see it as having some of the properties it does in fact have—it is a bounded, continuously moving object, and one sees it as such. This is enough to secure it as the target of one’s perceptual activity and so to make it the case that one sees the thing, even though one sees it as a bird of prey when it is not. This is a case in which some of the perceptual competences are manifested, but higher-level ones that depend on them are degenerately exercised. The explanation of indiscriminability is exactly the same as for cases of perceiving things as they are and hallucinating. Illusions are hybrid cases of manifestation and degenerate exercise of perceptual competences, and so have their qualitative character determined by the competences they are exercises of.

The Competence View can thus provide a plausible perception-first account of the nature of hallucination and illusion in a way that makes clear how they metaphysically and explanatorily depend on perception. It explains how cases of hallucination and illusion can be indiscriminable from cases of perceiving things as they are. It thus plausibly satisfies the second criterion for an explanatory theory of perception.

In the process of explaining the indiscriminability of hallucination and illusion from perception, we have uncovered a clear sense in which one is in the same perceptual state in all three cases—one is exercising the same competence(s), and thereby is engaging in perceptual activities with the same qualitative character. This gives us even more reason to identify having a perceptual experience with exercising one’s competence. I have no objection to doing so. However, exercising a perceptual competence is not prior to manifesting it (and so to perceiving), but rather the other way around.

\[73\] Thus the Competence View is disjunctivist only on certain ways of defining disjunctivism.
Having a perceptual experience, as well as the qualitative character distinctive of it, is metaphysically dependent on perceiving things as they are.

III. THE SCIENTIFIC NATURALIZATION OF PERCEPTION

As with the other two explanatory criteria, it is best to get started by clarifying what the Scientific Naturalization criterion is asking for. This is more difficult, and controversial, than the other two. What is required of a programmatic account of how the perceptually fundamental states might obtain in virtue of non-mental facts? What is required of a framework for scientific investigation into this question?

One influential proposal is that a naturalistic philosophical account of perception should identify perception (or perceptual experiences) with a kind of state or event that is (i) specifiable in non-mental terms and (ii) already the object of a science. The task of perception science is then to deal with these scientific objects. Hopefully, in the natural course of scientific investigation, we will discover more about these scientific objects (such as how they are produced, and what their causal roles are), and so about perceptual events. This view, though rarely argued for, is the dominant view in the cognitive sciences and is popular among scientifically minded philosophers of perception.

Representationalism clearly shows us how we might accomplish scientific naturalization of this sort. The representationalist claims that perceptual states are computational states of a certain kind. For example, it is common to suppose that visual experiences just are computational states at a certain stage of visual processing in the brain. If this is correct, then visual experiences (i) are specifiable in non-mental—that is, computational—terms, and (ii) are already objects of a science—that is, computational vision science, which studies such information processing. Vision scientists can then be concerned exclusively with computational states and processes and claim to be thereby concerned with vision as a person-level state or event. Should the perception-firsters try to provide this kind of account, or pursue an alternative? I think there are important reasons to approach the project of scientific naturalization differently, independently of the debate between perception-firsters and experience-firsters. This view of what a naturalistic framework should look like developed in the context of a very restrictive view of reductive explanation. On this approach, the goal of scientific reduction is to (i) provide definitions of higher-level phenomena in terms of lower-level phenomena, and then to (ii) a priori deduce higher-level laws from lower-level laws and
these definitions.\textsuperscript{74} This is no small task, and several theorists, perhaps most influentially Jerry Fodor, have argued that such a reduction of psychological laws to, for example, neural laws was impossible. Not willing to give up on the idea that the mental is part of the natural world, he advocated identifying psychological entities and laws with computational entities and laws as a methodological commitment of the science. That way no reduction is required.\textsuperscript{75}

Note that the question of how perceptual events obtain in virtue of non-perceptual ones is not really a target for vision science on this approach. The Fodorian standard framework \textit{presupposes} an answer to that question (namely, identity with a computational state), in effect eliminating any serious relevance of person-level events to scientific inquiry. The scientific inquiry that follows does not answer the question “How is perception part of the natural world?,” but presupposes an answer to it, a kind of answer that makes perception, the person-level phenomenon, all but irrelevant to scientific inquiry.

Those more sanguine about explanatory reduction do not fare that much better, for they are still looking for ways to excuse scientific inquiry from dealing with distinctively mental events. Whether or not one thinks that explanatory reduction is possible, on the traditional approach the goal of a scientific naturalization project is to find non-mental objects involved in regularities of a special science (for example, computational psychology), with which mental objects can be identified. Mental events must either be identified with non-mental scientific events or be eliminated.

Theorizing about scientific reduction has undergone a fruitful and substantive transformation recently, and many of the commitments that made representationalism look like the clear naturalistic winner are no longer widely held. According to a new and increasingly popular way of understanding inter-theoretic explanation, reduction is a thoroughly \textit{a posteriori} matter. We are not likely to get clean identifications of higher-level phenomena in terms of lower-level phenomena \textit{anywhere}, and we certainly are not going to be able to \textit{a priori} deduce higher-level regularities from lower-level ones together with definitions.\textsuperscript{76} Instead, we take

\textsuperscript{74}See, for example, Paul Oppenheim and Hilary Putnam, “Unity of Science as a Working Hypothesis,” in Herbert Feigl, Michael Scriven, and Grover Maxwell, eds., \textit{Minnesota Studies in the Philosophy of Science}, ii (Minneapolis: University of Minnesota Press, 1958), pp. 3–36.

\textsuperscript{75}Jerry Fodor, “Special Sciences (or: The Disunity of Science as a Working Hypothesis),” \textit{Synthese}, xxviii, 2 (1974): 97–115. I think it is no accident that representationalism should reflect the views about scientific naturalization of one of its main authors.

\textsuperscript{76}The causal regularities of the $A$s need not be identified with causal regularities of the $B$s (Michael Strevens, “The Causal and Unification Approaches to Explanation Unified: Causally,” \textit{Noûs}, xxxviii, 1 (February 2004): 154–76; Michael Strevens, \textit{Depth
the existence of both higher and lower-level entities, properties, and regularities for granted, and use the normal scientific experimental method to investigate how the one depends on the other.\textsuperscript{77}

Peter Godfrey-Smith addresses the issue of thinking about scientific naturalization of the mind given recent theoretical shifts that have been motivated by attention to actual scientific practice. He writes:

Suppose we imagine a future science of the mind that has an organization similar to that of reductionist parts of present-day biology. What would it look like? We would have little overt role for things called “laws.” Our knowledge would be organized largely in the form of descriptions of mechanisms—how they are structured and how they work. High-level capacities would be explained in terms of the capacities of lower-level parts.\textsuperscript{78}

In other words, we may think of the scientific naturalization project not as one of deducing higher-level regularities from lower-level ones, together with suitable definitions, but as one of empirically investigating how various high-level features, considered on their own terms, obtain in virtue of lower-level mechanisms.

When we apply this new way of thinking about scientific reduction to the case of perception, the space of possibilities opens up in a productive way. And, the reader will be unsurprised to hear, the Competence View lands squarely in the space of more plausible possibilities. The first and perhaps most important shift that occurs is in how we think about person-level perceptual events. According to this new approach, they are not in need of being made scientifically respectable or of being “vindicated.”\textsuperscript{79} Perceptual activities have already earned their keep: they are clearly important in explaining our mental lives (why we act and believe as we do), and they are...
increasingly playing robust roles in scientific explanations (such as in psychology, social psychology, and economics). We thus need not identify them (or their causal roles) with more “scientific” states or events, such as computational or neural states, and especially we need not do so prior to scientific inquiry.

This is a way of accommodating one of McDowell’s points (albeit in a way he might not be happy with). If we do not come at the question of how the mental is part of the natural world with a kind of incredulity or skepticism, but instead take it at face value that humans and other animals have distinctive features and causal powers, we can take them as the immediate objects of scientific study without supposing them to be identical to computational or neural states. It is only if we have some doubt about whether mental objects, properties, and regularities are part of the natural world that we need to identify them with other, non-mental features.

None of this means, of course, that we should not ask how perception obtains in virtue of natural non-mental facts. It just means that we do not need to antecedently commit ourselves to a certain kind of answer, one that actually precludes personal states and events from having distinctive features and causal roles. Instead, the task of a program for scientific naturalization becomes one of guiding scientific study into how features of our sub-personal cognitive systems, together with features of our bodies and environments, give rise to perception. This project needs a framework that is flexible enough to accommodate surprising a posteriori scientific inquiry, yet substantive enough to be an effective guide.

In the rest of this section, I will argue that the Competence View can provide an adequate framework for scientific inquiry when the project is understood in this way. First, I will explain how the Competence View provides a useful, flexible structure for reductive inquiry using the example of a dynamical systems approach to mental events. Then I will show how the Competence View can illuminate how computational sub-personal cognitive states might play an integral role in giving rise to perceptual events even though no person-level state or event is to be identified with these states. These two examples are chosen in order to reflect the applicability of the Competence View to a wide range of theorizing in cognitive science. Having a common framework that can accommodate such disparate approaches as dynamical systems theories and computationalist accounts can only help to clarify and facilitate productive empirical disagreement.

III.1. The Competence View, Emergence, and Dynamical Systems. According to the Competence View, scientific inquiry into the underpinnings of perception should look for the bases and manifestation
conditions of perceptual competences, and the stable regularities that are constitutive of competence possession. That is, it should study sub-personal cognitive activity and information processing as the operations of the bases of perceptual competences and whole perceptual system-body-environment events as manifestations of such competences. This sub-personal activity need not be independently scientifically interesting; it may be merely because of its role in generating perceptual events that it is of interest to scientific inquiry.

Here is an example that will help to clarify the proposal. Much work on embodied cognition has recently focused on how cognition might non-spookily emerge from dynamical systems. A dynamical system is a system whose behavior is governed in ways that essentially involve time. Although in some sense any process is a dynamical process (for any process essentially occurs over time), the temporal relations among different stages of a process may be more or less central to explaining the behavior of a system. In some cases, viewing a system’s behavior through dynamical systems theory can be very useful. One particularly relevant feature of dynamical systems is that they often exhibit emergent properties: interactions among parts of the system give rise to high-level properties of the whole system that cannot be expected a priori, but which can be empirically investigated, manipulated, and modeled, and so explained by appeal to lower-level features of the system.

Consider a simple case from Scott Kelso. As oil is heated in a frying pan, its surface begins to roll. The rolling of the oil is a high-level property, in the sense that the surface has the property and none of its molecular components does. It is emergent, in the sense that the rolling of the oil is determined by the properties of the oil molecules and the heat difference between the bottom of the pan and the surface. It is non-transparently emergent in the sense that just investigating the properties of molecules under the application of heat would not lead one to expect the rolling motion. Nevertheless, the rolling motion of the oil is unmysterious. We know that it is due to the features of oil molecules and the temperature differential between the pan and the
oil’s surface, and we can manipulate and control the rolling of the oil by modulating features of the system.

As this example makes clear, dynamical systems non-transparently give rise to emergent properties in cases that have nothing to do with mentality, and in ways that can be empirically investigated. If mental events are high-level, non-transparently emergent properties of this sort, then we can plausibly explain how they are part of the natural world without identifying them with neural or computational properties. Susan Hurley, a strong proponent of thinking about perception (and action) as such emergent features of dynamical systems writes:

Dynamic systems demystify emergence….Emergent properties are a function of the mathematical specification of the system, but may not be a transparent, or even a translucent, function….Structure at the emergent level may not be explicable in terms of any independently identifiable isomorphic structure at the emerged-from level….Familiarity with the unpredictable emergent properties of dynamic systems should make us wary of claims that cognitive properties or conceptual structure simply could not arise except in ways that depend on isomorphic underlying properties or structure. It should also make us wary of projections of properties or structure from the personal to the sub-personal level.83

While I agree with Hurley that appeal to dynamical systems goes a long way to demystify emergence, I do not think it does the whole job for us. We need a sense of what person-level features are being explained, so that we can look for dynamical systems that might plausibly give rise to them. Embodied cognition theorists, especially those focused on using dynamical systems in their explanations, have not focused on this question. Without a clear conception of what dynamical systems are supposed to explain, several theorists have given eliminativist construals of their project. Anthony Chemero, for example, claims that his view is “eliminativist root and branch,”84 due to its opposition to mental representationalism and its focus on dynamical systems.

Contrary to what many embodied cognition theorists believe, there is nothing about (i) rejecting the idea that there are mental representations and (ii) using dynamical systems in order to explain perception and other mental events that requires one to be eliminativist. This only appears so if we are still working within a framework that thinks of perception (or other forms of cognition) as inherently

representational. Once we think about perception as an activity with an aim and a target in the way I have proposed above, we can set about trying to explain the emergence of such an activity in terms of dynamical systems. Perception and its distinctive features may be emergent properties of a dynamical system composed of the subject’s cognitive system, body, and environment, with the subject’s cognitive system constituting the basis of her perceptual competence and the behavior of the whole system constituting the manifestation of the competence.

Making a distinction between the basis of an agent’s perceptual competence and the whole manifestation conditions is no more problematic than making a distinction between the molecules of the oil and other features, such as the surface of the frying pan below and of the air above. Each of these has a distinctive role to play in the explanation of how the whole system produces the rolling motion of the oil. Different aspects of the system will make different contributions to emergent properties.  

Considered in this robust realist way, we can think of the proposal that perceptual activities are emergent properties of dynamical systems as a specific research program within the new empirical turn in work on scientific reduction. It is one among many possible proposals for how low(er)-level features might give rise to distinctive mental properties in a fully naturalistic, scientifically understandable way. What attention to this example shows is that by adopting the Competence View as a framework for scientific inquiry, we can clearly see how it might both be the case that perceptual features are distinctively mental and first-personal and that they can be scientifically explained in terms of non-mental features.

At this point, it bears brief mention that the Competence View of perception provides a unified account of the aspects of perception that are normally treated separately. For example, if perception is an activity the perceiver engages in with objects in her environment, then it should be no surprise that sometimes bodily (for example, eye) movements play a crucial constitutive role. It also easily encompasses work on explaining temporally extended visual relations to external objects, such as smooth motion pursuit, visual object  

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85 In a dynamical system, the behavior of each part is explained in part by its relationship with other parts. That does not prevent us from imposing the kind of reliability condition we did above. It is still possible that a component of a dynamical system may form a part of a different dynamical system on another occasion, and make the same contribution in each.

tracking, and object-based attention. These features are often treated independently from an account of how things look to us, without a clear theory of how it all fits together. On the Competence View, how things look to us is merely an aspect of our perceptual engagement with the world, and so should not be given independent treatment.

III.2. The Competence View, and Explanation by Appeal to Computational Mechanisms. We can look at the contribution that the Competence View provides to the scientific investigation of perception from another angle, which will hopefully make clear that this proposal is substantive enough to facilitate empirical investigation, yet flexible enough to accommodate a wide range of empirical approaches. Perhaps surprisingly, the Competence View can provide a useful framework for computational perception science.

Some argue that computational cognitive science is already at least implicitly working within a competence framework for explaining mental events, perhaps most notably Noam Chomsky and Frances Egan. Both Chomsky and Egan think that computational cognitive science aims to explain person-level performances—for example, seeing or reaching for and grasping objects—by characterizing the computational processes that, together with facts about the environment and causal regularities, explain how we reliably perform in such ways.

However, both Egan and Chomsky think that the final step of connecting a computational model to a pre-theoretically characterizable performance (such as perception or action) is merely an informal gloss on an otherwise rigorous theory of cognitive processing.

Talk about organs or organisms “solving problems”, or being adapted to their functions, is to be understood similarly: as metaphoric shorthand. . . . The theory itself has no place for the concepts that enter into the informal presentation, intended for general motivation.


They are driven to this view by considerations other than those we have been concerned with here, namely that we seem to have no rigorous account of how to attribute content to computational symbols and that current methods for doing so are heavily influenced by pragmatic factors, such as the interests and goals of researchers. They are also motivated by the observation that much of the work of computational cognitive scientists has little to do with cognitive mechanisms’ relationships to the environment. For example, the formal or mathematical characterizations of computational mechanisms typical of computational cognitive science need not advert to the subject’s environment at all.

Although Egan and Chomsky claim that computational cognitive science is interested in explaining person-level competent performances, their accounts of how it explains them makes computational cognitive science a failure at this task. On their views, we do not ever really get rigorous scientific explanations of perceptual (or other person-level) performances, but only of the operations of computational mechanisms. Egan does notice this issue and tries to salvage the cognitive scientist’s explanation of our mental competences, but she does not dwell on it:

But since the theory must explain the organism’s manifest success at computing the cognitive function in its normal environment (for example, seeing what is where, grasping objects in view), it must also advert to general facts about that environment that explain why computing the mathematical function specified by the theory, in context, suffices for the exercise of the cognitive capacity.91

This passage cannot put us at ease if we have accepted Egan and Chomsky’s worries. Egan is at pains throughout her paper to remove the standard explanatory connection between computational mechanisms and person-level perceptual states, namely that having a perceptual experience is being in a certain computational state with the right kind of content. Because there is no rigorous way to assign contents (and she thinks there is not likely to be), cognitive science does not explain perceptual competences in this way.92 But if there is no rigorous way to assign content, traditional computational cognitive science does not provide us with an understanding of how regularities between computational mechanisms and features of the world suffice for possession and manifestation of competences.

91 Egan, “How to Think about Mental Content,” op. cit., p. 128.
92 I can remain neutral here on whether it is possible to rigorously assign contents to computational states of the cognitive system. Whether or not this is possible, computational states will still play the same role in the Competence View’s account of perception.
Chomsky (and Egan in her more pessimistic moments) thinks that providing an informal explanation of perception is the best that can be done. While both recognize that scientists want to explain person-level competent performance and that they want to do so by understanding how the operations of cognitive mechanisms in the right environmental conditions give rise to these competent performances, they understand that there is a big leap from the kinds of accounts that are typically given of computational mechanisms to explaining how we see.

Their pessimism, however, is only warranted if we do not revise the scientific naturalist project in philosophy of perception as I have suggested. As discussed above, because the focus in computational vision has been on studying computational features that are \((a \text{ priori})\) identified with perceptual states, there has thus (as a matter of design) been little explicit empirical work trying to empirically investigate how they are related. This difficulty is not inherent to the use of computational tools in studying perception or other person-level performances, but only to the traditional approach to scientifically naturalizing perception.

A computational model of sub-personal cognitive processing must be only part of a rigorous account of perception. What is missing is (i) a realist account of perceptual competence possession and manifestation; (ii) a rigorous empirical theory of the relationships between the computational basis of the agent’s competence, her body, and her environment; and (iii) a rigorous empirical theory of how that interaction gives rise to perceptual activities. I have presented (i) here, and have presented some guidelines for (ii) and (iii). Any adequate computational theory of perceptual competence will make a distinction between the basis of the agent’s competence and the full manifestation conditions of the competence, such that the probability of the former given the latter is sufficiently high. The empirical project of providing (ii) and (iii) will use normal scientific methodology to characterize key features of the sub-personal systems in virtue of which we possess and manifest perceptual competences, of perceptual activities and competence possession, and of how perceptual activities might be manipulated and modified by changes in information processing in the brain or the body and environment.

We should see the computational characterizations that scientists are currently positing as partial theories of perceptual competence possession. Computational theories of vision, according to the Competence View, have been mainly focused on characterizing the operations of bases of perceptual competences. They have also attempted to sketch at least in part how this basis might be related to the environment in order to constitute competence possession and manifestation. This
The kind of approach I am recommending embraces the idea that information processing may be central to an account of perception, but denies that it is sufficient. Perceptual information processing is mental at no stage; rather it is merely a part of what makes a perceiver engage with an object as the target of her perceptual activity. Further empirical work must be done to explain how this is so. Whether or not Chomsky and Egan are correct that we will not find a rigorous way to assign content to computational states, any attempt to do so should be a posteriori and part of a larger empirical project of investigating how perceptual performances and competences obtain partially in virtue of such information processing.

Not only does this account of the place of information processing help us to understand how the current computational vision program needs to be emended in order to provide a rigorous explanation of vision, it avoids some plausibly false consequences of the standard representationalist approach. For example, the Competence View does not require that perceptual information processing result in a unified representation that can be identified with the perceptual experience, and whose content is supposed to explain the qualitative character of experience, as representationalism does. This is a welcome result, because there is little evidence that such a representation exists, and there is an increasing number of compelling computational explanations that do not assign contents that might correspond to what features things seem to have. For example, Dale Purves and collaborators have proposed a compelling theory of the Müller-Lyer illusion and other visual illusions. Their theory, however, involves attributing highly complex statistical contents to the computational states that play the most direct role in the qualitative character of experience. These contents clearly are not candidates for the contents of perceptual experiences. Although this is at least a prima facie problem for representationalism, it is not for the Competence View, according to which computational states at most partially constitute

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perceptual activities, and exactly how they make their contribution is an open empirical question.

The Competence View can thus embrace much of the practice of computational vision science, even if it provides an importantly different account of the relationship between computational states and perception. I see no reason to reject the idea that neural features can encode information, and that their doing so might be crucial to explaining the agent’s engagement with her environment.\(^\text{94}\) The Competence View only rejects the idea that certain encodings of information are perceptual experiences, rather than part of the facts in virtue of which the agent perceptually engages with her environment.

I have presented these two examples, not only to show that the Competence View is compatible with a wide range of approaches to the non-mental bases of perception, but also to demonstrate that it provides us with enough structure to understand what a rigorous scientific theory of perception will be like. It is important for this project that we clarify the *explanandum*—perception—and keep it in focus. The Competence View does this by providing a realist account of perception as a person-level, agential phenomenon. It is also crucial that we not expect an *a priori* connection between sub-personal systems and perceptual competence possession and manifestation. This is as much an object of empirical inquiry as sub-personal systems and personal perceptual activities themselves.

**IV. Conclusion**

My aim in this paper has been to establish a serious perception-first contender to representationalism, one that plausibly rivals representationalism in explanatory power. I conclude with a short summary of the Competence View, and some remarks on what progress has been made.

**The Competence View:**

(i) Perception is by nature a particular kind of activity, namely an achievement. It is a manifestation of a competence to perceive. The directedness of perception is practical: in perceiving the agent aims to perceive; what she perceives is the target of her perceptual activity. How she perceives her target to be is determined by her perceptual competence.

(ii) Hallucination is a degenerate exercise of perceptual competence. In hallucinating, the agent aims to perceive and fails. Sameness in qualitative character is explained by the fact that the same

\(^{94}\) Shapiro, *Embodied Cognition*, op. cit., also points out that a dynamical systems approach can be compatible with a computational approach.
competence is manifested on both occasions, and so the agent performs with the same aim at a certain level of abstraction. Illusions are hybrid cases, due to various structural features among competences to perceive.

(iii) The project of scientifically naturalizing perception is that of scientifically investigating in virtue of what agents engage in perceptual activities. This will involve understanding how the subject’s subpersonal cognitive system interacts with her environment in order for competence possession and manifestation to emerge. It is compatible with a wide range of empirical approaches to studying the subpersonal features responsible for perception. No matter the specific approach to the features underlying perception, further empirical work must be done to investigate how perceptual competence possession and manifestation depend on these features.

I hope to have convinced the reader that the Competence View is a plausible, genuinely explanatory perception-first theory. It plausibly satisfies each of the central explanatory criteria for a theory of perception. Of course, the framework needs to be filled out, and there are a variety of options. For example, a fully worked-out theory would explain the way in which different perceptual competences function in a coordinated way, explaining further structural features of perception, and making predictions about what kinds of illusion are possible. And, of course, it might be wrong: perception may not be an activity, and it may not be a manifestation of competence. However, it is a clear and substantive proposal, one that at least prima facie plausibly answers the central explanatory questions that a philosophical theory of perception should seek to answer. While there is still much work to do in developing the Competence View, I think it is fair to say that representationalism is no longer the only game in town.

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