

Seeing Other People: An Enactivist Account of Hallucination as Perceptual Error

By

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Abstract:

In this essay, I explore the difference between Representational Theories of Content (RTC) and Embodied Enactivism, and argue that enactivist approaches of perception can account for hallucinatory experiences, a sensory phenomenon readily explained by the RTC approaches. RTC bases perceptual activity on the presence of representational features interpreted by the brain, and are defined by their relation to independently existing objects. The enactivist model uses success and failure to determine whether or not a perception is hallucinatory by appealing to the use of all of the body's sensory modalities to navigate a perceptual error.

In Chapter two I present my arguments for an enactivist theory of hallucination, first by demonstrating that illusion and hallucination, broadly thought of as being two radically different phenomena, are actually one and the same. I also demonstrate how it is that bodily experiences affect the type of hallucination a patient will have, appealing to mood, repetitive tasks, and current environmental presences. My last strategy cleaves a wedge between visual imagery and hallucination, an assumption often made by representationalist accounts of cognition. RTC arguments made to support visual imagery are used to demonstrate how hallucinations are representational, but if the two experiences are actually different, then arguments for visual imagery become less convincing.

Chapter three focuses on some lingering concerns and interesting implications of the enactivist theory. Veridicality differs from successful/failed perceptions by appealing to the degree with which the agent can make sense of their perceptions. I also argue how smaller misperceptions are hallucinatory, as well as how auditory hallucinations and multi-modal hallucinations are also explainable to the enactivist. Dreams pose the last challenge I address, for

they exhibit some embodied characteristics all the while being impervious to the success/failure metric of perceptual activity.

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Chapter One: A Brief Introduction to Theories of Perception

In 1759, Charles Lullin woke up one morning to discover that he could ‘see’ where before he had been completely blind. Lullin’s grandson Charles Bonnet developed the first account of hallucination in blind patients by using Lullin’s reports of perceptions: silent but visually detailed men in capes and hats, floating blue handkerchiefs, and dancing butterflies. It would later become his namesake contribution, Charles Bonnet Syndrome.¹ This is one of several known hallucinatory disorders, where individuals report ‘abnormal’ sensory experience.

Theories of perception have tried to explain how hallucinatory episodes relate to perception, and to cognition in general. In this thesis, I develop an enactivist definition of hallucination and illusion, different from other approaches that try to explain hallucination as ‘non-veridical’ experience framed in terms of a perception’s correspondence to external objects. Instead I propose a theory in which hallucinations are treated as perceptual error, not focused on whether or not a feature directly corresponds to an external object, but more importantly, stresses the interaction between what is perceived and the agent. Enactivism, a type of embodied cognition, is the approach in which my own theory is grounded. Even other non-representational accounts frame illusion in terms of veridicality, which is still rooted in the traditional, representational, approach of perception. In order to begin my argument, this chapter provides a brief introduction to the two central models of perception, also foreshadowing the ‘enactivist’ approach explored in chapter two.

I begin by distinguishing two main approaches to the philosophy of perception: a Representational Theory of Content (RTC) and Embodied Cognition theory. RTC provides a plausible explanation of hallucination that is cohesive with the rest of the doctrine, and I will

¹ The Charles Lullin account used in this paper is provided in detail by: Dominic H. ffytche, “The Hallucinating Brain” in *Hallucination: Philosophy and Psychology*, ed. Fiona Macpherson et al. (Cambridge, MA: MIT Press, 2013), 50; and Oliver Sacks, *Hallucinations* (Toronto, Knopf Canada, 2012), 7.

recount the strong challenge posed from the representationalist camp. Of the embodied theories, I support the enactivist approach, explained in more detail in section 1.2: *Embodied Cognition*. Enactivists stress the importance of immediate perceptual feedback from the environment but typically have a difficult time accounting for anything that might require reflective and imaginative processes (i.e. dreaming, planning, hallucination).² Some offer possible strategies for handling this challenge. Ultimately these accounts are limited, underdeveloped, or unwittingly incorporate RTC features when it comes to thinking about perceptual error.

In Chapter two I present my arguments for an enactivist theory of hallucination, first by explaining hallucination in terms of action-oriented behavior, applying my theory directly to real case studies. I then make three points that demonstrate that there is a strong relationship between perceptual error and enactive cognition. First, I show that illusion and hallucination, broadly thought of as being two radically different phenomena, are actually one and the same. Perceptual error is also informed by the body's interaction with the environment, one of the key tenets in enactivist approaches. My last strategy cleaves a wedge between visual imagery and hallucination, for RTC theorists argue that imaginings and hallucinations are both produced by the same faculty, one that represents where there is no corresponding object at the ready. RTC arguments that support visual imagery are used to demonstrate how hallucinations are representational, but if the two experiences are actually different, then arguments for visual imagery become less convincing.

In Chapter three, I address some implications and concerns for anyone still skeptical of the enactivist approach. For instance, where is the boundary between smaller perceptual errors and cases of hallucination? What about the difference between dream states and hallucinations?

²Michael Wheeler, *Reconstructing the Cognitive World: the next step*, (Cambridge, MA: MIT Press, 2005), 214.

These are just a few of the questions that I attempt to answer later on, but before exploring these ideas, we should have a clearer grasp on the difference between RTC and embodied cognition.

1.1: Representational Theories of Content

RTC theories of perception provide one of the most established explanations of hallucinatory experience, theories that rely on the use of representation to describe how agents perceive objects in their environment. According to this family of approaches, mental states have intentional content³ — that is, they refer to, or are about something.⁴ In cognitive science, representations are thought to “stand in” for objects within the agent’s cognitive processes.⁵ In other words, objects of perception are not perceived directly, but are mediated by representations, created by the consciousness. Usually these objects are external, but agents can have representations of non-present, or imagined, entities, as in the case of hallucination.⁶ Hallucinations misrepresent their objects because the content of the visual experience does not correspond to any independently existing object outside of the person’s perception.⁷ Experiences go beyond the structure of actual stimuli because the brain imposes certain structured forms onto raw stimuli, which can explain why people see images in non-organized visual features.⁸

³ The idea of intentionality, however, must be treated with some care, as there are different senses of the term. There is intentionality in the weak sense of the word, which does not make any heavy metaphysical or epistemic commitment about the type of mental states that agents have. It is acceptable to support a modest intentional stance without committing oneself to claims about the content of mental states. As will be seen shortly, Maurice Merleau-Ponty argues that the world can have an intentional structure, all the while also asserting that perceptual experience is also anti-representational. RTC propose a strong intentional claim, suggesting that perceptual states have content that is correspondent to some truth-value and that judgments can therefore be made about the content of experience. Broadly speaking, this approach fundamentally asserts that thinking about judgment precedes action. Susanna Siegel, *The Contents of Perception*, (Oxford: Oxford University Press, 2010), 4. Maurice Merleau-Ponty, *The Phenomenology of Perception*, trans. Donald A. Landes (New York: Routledge, 2012), lxxxi-lxxxiii.

⁴Bence Nanay, “Perceptual Representation/Perceptual Content”, in *The Oxford Handbook of Philosophy of Perception*, ed. Mohan Matthen. (Oxford: Oxford University Press, 2015), 2.

⁵Wheeler, *Reconstructing the Cognitive World*, 59.

⁶Heather Logue, “Disjunctivism”, in *The Oxford Handbook of Philosophy of Perception*, ed. by Mohan Matthen. (Oxford: Oxford University Press, 2015), 8.

⁷Bence Nanay, “Perceptual Representation”, In *Encyclopedia of Perception*, ed. by E. Bruce Goldstein. (Thousand Oaks: SAGE Publications, Inc., 2010), 792.

⁸John Searle, *Consciousness and Language*, (Cambridge: Cambridge University Press, 2002), 13.

There is a causal aspect to the RTC story. Lullin's case would be considered representational because, "some aspect of how things appear is generated without the appropriate stimulation of the relevant sensory organ".⁹ In veridical perception, an agent would see red because there an object has a red colour property. The sensing of an object leads to the representation of the object's property. In hallucination, there is no such object available to offer that sensory stimulation. The images are coming from elsewhere.

RTC theories require the use of concepts to explain how it is that agents make use of their perceptions for further thought processes. Fred Dretske, for example, argues that understanding requires judgment, which in turn is conceptual.¹⁰ Sensation, or the raw data given to the agent, provides information about the sensed object, but without the use of representations, will not be *understood* by the perceiver.¹¹ Concepts are required to explain the jump from sensation to perception. Perception requires something over and above mere sensation, and it is through the use of representation that the perceiver interprets what they see. Concepts explain the understanding that perceptually guided action requires. They must exist to explain all non-natural experiences, argues Searle, because otherwise we would not be able to explain what it means for an object of perception to be "a nice day for a picnic", or "a bathtub."¹² Some sensed properties (i.e. colour, shape, matte finish), are themselves not thought of by RTC supporters as conceptual, but the meaning derived from the whole experience more than likely requires concepts.

With respect to hallucinations, concepts are needed to supplement the experience's data. Realizing that one is hallucinating requires an understanding of the content of that perception because otherwise the agent would not be able to discern veridical experiences from

⁹ Logue, "Disjunctivism", 3.

¹⁰ Daniel Hutto & Derek Myin, *Radicalizing Enactivism*, (Cambridge, MA: MIT Press, 2017), 19.

¹¹ Nanay, "Perceptual Representation", 3 of 5.

¹² Searle, *Consciousness and Language*, 17.

hallucination. Embodied theorists and modest RTC supporters alike need to be able to prove how it is that ‘raw sensory information’ leads to understanding a perceptual experience. How does the hallucinated object come to be?

Visual representation presupposes the existence of ‘real’ observer-independent objects. RTC is a family of information-sensitive approaches, as the agent receives information about their environment from the represented objects. The transactional use of information implies veridicality conditions, the idea that individuals are able to make truth-value judgments about their perceptual experiences.¹³ In the case of successful perception, the agent will see a veridical perception of a stop sign and act accordingly by stopping at the sign. A non-veridical, or hallucinatory, experience will cause disruption and misinformation when the agent represents-plans-enacts. If the agent hallucinates that the stop sign is a tree, the agent will fail to stop, which is not only potentially dangerous, but misrepresents features of the environment that could be useful for planning one’s actions. It should be noted, however, that if the agent knows that he or she is hallucinating, failed interactions can be avoided. On the other hand, discerning veridical from non-veridical perceptions is more difficult to accomplish when the agent assesses the perception from a static point-of-view, with only the visual scene to guide them. The hallucination might not affect the overall success of the current action, but it will lead to a false belief about what is represented. The error may prove to be hazardous at a later time, perhaps when the agent is performing a different action.

Representationalists can easily explain hallucinations because they can explain the relationship between perceptual and non-perceptual representations.¹⁴ Their argument appeals to the “real” ontological status of things being perceived. A hallucination does not correspond to

¹³Wheeler, *Reconstructing the Cognitive World*, 59.

¹⁴Nanay, “Perceptual Representation/Perceptual Content”, 2.

any externally existing object, and so must be created through the use of content in the mind. A hallucinating individual experiences a certain representation, or sees content, where there is no actual corresponding object.¹⁵ Veridical perceptions, on the other hand, not only have intentional contents, but also have referents — the represented object is the referent that corresponds to the content of the hallucination.¹⁶ Sometimes cognitive scientists phrase this conclusion by saying that ‘hallucinations do not exist’. What this statement means is that hallucinations are not veridical experiences because they do not correspond to any independently existing object of perception. Any theory seeking to argue against even weaker forms of representationalism will need to address the veridical and non-veridical distinction.

Another large feature of RTC approaches is the distinction between private and public access. *Private access* describes the mode of perception of objects only available to the individual experiencing them.¹⁷ Any thought, belief, or feeling is a mental state available only through private access, unless otherwise shared by the person having the experience.

Publicly accessible objects, on the other hand, can be described as objective features of the environment available to all perceivers. Why is the distinction between private and public access so crucial? Hallucinations are often considered (not only by philosophers, but also by cognitive scientists who support RTC views) private objects of perception.¹⁸ Like other kinds of mental content, hallucinations are only available to the person experiencing them. There is no way that any other agent can have direct access to hallucinatory perceptions, which implies that the misperceptions are not part of any external, verifiable, objective, environment that can be shared amongst perceivers.

¹⁵Jerry Fodor, *A Theory of Content and Other Essays* (Cambridge, MA: MIT Press, 1990), page number.

¹⁶Nanay, “Perceptual Representation”, 2 Of 5.

¹⁷John Heil, *Philosophy of Mind: A Contemporary Introduction*. (New York: Routledge Publishing, 2012), 14.

¹⁸Heil, *Philosophy of Mind*, 14-15.

The distinction between private and public realms of access is also metaphysically salient, for many REC supporters believe the perception, as well as other cognitive processes, only take place within the agent's body (sometimes called the "blood-and-bone barrier"). Ned Block argues that nothing outside of the brain is part of the metaphysical 'minimal sufficient condition' for perceptual experience.¹⁹ As will be demonstrated later, thinking of perceptual activity as isolated within the individual is an idea diametrically opposed to one of the main tenants of embodied cognition theory.

Consider Charles Lullins' case again, and imagine that he is hallucinating the well-dressed men in his living room. Defenders of the RTC model would argue that Charles is not perceiving any real, existing object, even though his experience has a certain qualitative feel. Searle argues that when someone is hallucinating they are not aware of anything, which I take to mean in the objective sense. The hallucinated object exists, however, but as something in one's mind – in the realm of private access.²⁰

Another crucial aspect of RTC accounts is the assumption that sensory experience has a phenomenal character, what it means to feel like one is having a certain type of experience.²¹ Some theorists, like John Searle, argue that materialist explanations of cognition separating mental activities from physical processes fail to account for the phenomenal feel of an experience. He suggests that consciousness is the presence of mental states within an agent, and that those mental states are both identical to, and arise from, lower-level neurobiological processes.²² Phenomenal properties correspond to feeling certain aspects of the object, and

¹⁹Ned Block, "Review of Alva Noë, *Action in Perception*", 367.

²⁰ John Searle, *Seeing Things as They Are: A Theory of Perception*, (Oxford: Oxford University Press, 2015), 25.

²¹ Siegel, *The Contents of Visual Experience*, 3.

²² Searle, *Consciousness and Language*, 9.

contribute to the overall phenomenal character of a perception.²³ Some theorists believe that if the overall character of a perception is indiscernible between veridical and non-veridical perceptions, then the difference must arise from distinctions between the respective properties.²⁴ Although there is some disagreement amongst RTC supporters as to which features of visual experience contribute to the agent's phenomenological feel, what is important is that RTC supporters all try to address the issue of visual phenomenal character. Even discerning the difference between veridical and hallucinatory experiences could be marked by a complete change in the phenomenal character of hallucinations, although other philosophers believe that hallucinations and veridical experiences have essentially identical phenomenal character. The ongoing debate within the RTC community is not a major concern for my project. It is simply essential to acknowledge its role in determining accuracy conditions for them.

RTC supporters often discount embodied cognition because the theory does not account for qualia, or qualitative feel. A mind, possibly through use of representational capability, gives rise to an awareness not explainable by non-representational theories. This relates back to the earlier mention of "raw data". Embodied cognition theories therefore have the burden of explaining how it is that phenomenal character arises from raw perceptual data, and which features of the perception can tell us how to distinguish veridical from non-veridical perceptions.

Another feature of the RTC position is that perception itself represents the visual field as objectively determined, allowing all of the details of the scene to be present and taken in by the individual.²⁵ The agent does not so much as interact with the scene as they survey it, making the perceptual process quite static compared to enactive perceptual processes. The visual scene is

²³ Fish, *Perception, Hallucination, and Illusion*. (Oxford: Oxford University Press, 2009), 54-5. Example: how the shininess of an apple is itself a property, but contributes to the overall experience of the object.

²⁴ William Fish, *Perception, Hallucination, and Illusion*, 36.

²⁵ Wheeler, *Reconstructing the Cognitive World*, 72.

context-independent and time-insensitive, meaning that identical observers garner the same information from a visual experience regardless of the agent's current task, or the time that the agents perceive it. Once the individual has represented a map of their external environment, they plan around their obstacles to complete their task. If the plan fails, the agent will reassess the goal without the use of any additional sensory feedback. Michael Wheeler explains that, "the environment [in RTC] is no more than (i) a furnisher of problems for the agent to solve, (ii) a source of informational inputs to mind, (iii) a kind of stage on which sequences of preplanned actions are simply executed".²⁶

1.1.2: Problems with RTC

While representationalist accounts of hallucination are detailed, RTC theories of perception are not without their issues. Daniel Dennett identifies what he calls the "Hard Problem of Consciousness", difficulty in causally linking the qualitative feeling of experience to physical brain processes. If mental content, like belief, does not exhibit the same properties as physical phenomena, how can the two dominions be linked together to explain consciousness? It is clear how physical elements causally interact with one another, but representations and the use of concepts presuppose some non-material mental entities, and it is unclear how the two features of consciousness interact. Because the non-representationalist approach does not require the use of mental content, enactivists do not focus on the hard problem of consciousness. That being said, reductionist positions also have the burden of explaining how it is that perceptual experiences feel a certain way, phenomenologically. As will be seen later, however, some enactivists do have a response for this concern.

While the Hard Problem might very well be impossible to solve, enactivism avoids the problem altogether. Enactivists deny the existence of qualia, mental entities with special

²⁶Wheeler, *Reconstructing the Cognitive World*, 81.

phenomenal properties.²⁷ In part this is due to the fact that enactivists reject the rigid identity statement linking physical properties to qualitative feels.²⁸ The relationship between the mental and the physical does not need explaining because there is no distinction for the enactivist. A conscious agent is both a thinking and extended substance.²⁹

1.2: Enactivism

Enactivism is a non-representational theory of embodied cognition that attempts to describe perception as an active process between agent and environment that is not mediated by representation or sense data.³⁰ **Alva Noë**, **J.J. Gibson**, and **Daniel Hutto** are theorists who argue that perception is primarily rooted in the lived body, and that the system between perceiver and environment is always providing perceptual feedback. While there are several strains of enactivism, Hutto and Myin identify two theses that *all* forms of enactivism support: the *Developmental – Explanatory Thesis* and the *Embodiment Thesis*. The Developmental-Explanatory thesis states that mentality-constituting interactions are grounded in the organism’s previous interactions.³¹ This is evident in learning processes and other forms of skill acquisition, and also accounts for any agent-relative perceptual experiences.³² The Embodiment Thesis simply states that cognition entails a dynamic interaction between body and environment.³³ Perception is fundamentally action-oriented. It therefore requires the use of the whole body, including subtle features like eye movements in ascertaining visual details.³⁴ The use of the body

²⁷ Hutto and Myin, *Radicalizing Enactivism*, 157; O’Regan and Noë, “A sensorimotor account, 960.

²⁸ Hutto and Myin, *Radicalizing Enactivism*, 157.

²⁹ Hutto and Myin, *Radicalizing Enactivism*, 169.

³⁰ Nanay, “Perceptual Representation/Preceptual Content,” 3.

³¹ Hutto and Myin, *Radicalizing Enactivism*, 8.

³² Lawrence Shapiro, “Embodied Cognition”. In *The Oxford Handbook of the Philosophy of Cognitive Science*, ed. by Mohan Matthen. (Oxford: Oxford University Press, 2015), 122.

³³ Hutto and Myin, *Radicalizing Enactivism*, 6.

³⁴ J. Kevin O’Regan and Alva Noë, “A Sensorimotor account of vision and visual consciousness,” *Behavioral and Brain Sciences* 24 (2001), 943.

supplies the agent with the feeling of having immediate access to the surrounding environment.³⁵ Maurice Merleau-Ponty asserts that all perception is grounded in sensation, where sensation is an element of the spatial configuration.³⁶ Enactivism gains strength as a theory of immediate “online” cognitive activity, not usually used to account for reasoning or problem-solving tasks.³⁷ Activities like navigating a physical environment, or reaching for certain objects, are examples of online cognitive activities.

Perception is, even more importantly, a constant feedback loop between environment and agent, making perception constantly constitutive. Noticing details in the environment depends on the integration of features of the visual field as whole, relaying more details to the agent as they move about. Certain static features of the environment might not initially appear to the perceiver, unless juxtaposed against a moving background.³⁸ Merleau-Ponty even points out that visual presence is not limited to physical variables, so much as activity that arises from the interaction, dependent on the agent-environment-body loop.³⁹ The agent’s understanding of the sensed field will change as they navigate around, sensing both visually present and visually hidden features.⁴⁰ In RTC, the perceiver is a passive receptor compared to the description of the perceiver in enactivism, as a dynamic element of the sensory process.⁴¹

Thinking of cognition as anything but representational will be confusing for most people to grasp. How could anyone even understand their perceptions if they did not employ concepts to make sense of their experience? As mentioned earlier, philosophers and researchers sympathetic to RTC might argue that what the agent ‘takes in’ through the senses is ‘raw’ sense data, and

³⁵O’Regan and Noë, “A Sensorimotor account”, 947.

³⁶Merleau-Ponty, *Phenomenology of Perception*, 4.

³⁷Shapiro, “Embodied Cognition”, 143.

³⁸Shapiro, “Embodied Cognition”, 121.

³⁹Merleau-Ponty, *Phenomenology of Perception*, 11.

⁴⁰Noë, *Varieties of Presence*, 25-6.

⁴¹Shapiro, “Embodied Cognition”, 120.

therefore utterly unintelligible on its own. Redefining perceptual experience as an enactive process begins with a complete sensorimotor account of perception, provided by Alva Noë and Kevin O'Regan. Concepts are not necessary to make sense of one's perceptions, the duo argues. Instead the agent uses two types of "contingencies" to navigate their environment. It is through these contingencies that the agent visually grasps and learns to understand certain visual forms. First the agent has the appropriate skill-set to perceive certain structures (called *sensori-motor contingencies*). Each sensory contingency has its own structure of rules, which explains, for example, how olfactory perceptual experience is distinguishable from visual experiences.⁴² The second feature is a contingency derived from the character of the object that the agent is interacting with (*visual-object-related contingency*).⁴³ Visual stimulation occurs as a certain 'type' of experience, and it is the use of the two contingencies together that gives rise to the phenomenal feeling of perceptual experience.⁴⁴ The phenomenal character arises from developing certain perceptual skills, slowly recognizing forms and patterns. Agents learn how to interpret their experiences by accumulating skill through the exercise of the two contingencies. Seeing a stop sign means something to the perceiver because they have encountered the signs before and know how the object is presented to the senses. The agent possesses knowledge, a non-propositional knowledge, about the sign they recognize and experience. The sensorimotor account of perception is not unique to Noë and O'Regan's enactivist theory, for Merleau-Ponty also argued that the agent learns to recognize 'intentional structures' through activity.⁴⁵ RTC theorists often criticize Alva Noë for not using concepts to explain visual phenomenon, instead

⁴²O'Regan and Noë, "A Sensorimotor account," 941.

⁴³O'Regan and Noë, "A Sensorimotor account", 943.

⁴⁴O'Regan and Noë, "A Sensorimotor account", 944.

⁴⁵Merleau-Ponty, *Phenomenology of Perception*, 210.

choosing to define perception as an activity. He does not separate concepts from visual experience because they are one and the same.⁴⁶ To have a concept is to learn perceptual skill.

As opposed to the RTC position, enactivists do not typically endorse the distinction between ‘private’ or ‘public’ access.⁴⁷ Consciousness is co-constituted by the shared world and while humans have the capability to generate the same meanings as others, it is also true that the relationship between each individual and their environment is unique. Consciousness co-constitutes the shared world by ‘altering the structure of its landscapes’ and picking out integrated features of the scene into a meaningful pattern, in turn creating meaningful patterns in the world (especially with regards to man-made artifacts, and social elements).⁴⁸ Likewise, enactive cognition implies that individuals can assess and engage with the thoughts or feelings of others directly by observing behavior and engaging with them. This is crucial for studying hallucinatory experience, as RTC approaches assume that only the patients have full access to their visual experiences, even though surrounding agents can observe and engage with the patient and the patient’s hallucinatory experience.

The blur between private and public access also entails ‘non-veridical perception’.⁴⁹ Veridicality is a measurement of truthfulness, which as demonstrated earlier, is an implication of forming a judgment based on the contents of perception. What Hutto and Myin suggest is that actions themselves do not contain any sort of content that can be evaluated in terms of truth-condition. They write:

“there is no question of perceptual experiences being true or false, accurate or inaccurate, veridical or non-veridical. To suppose otherwise is to fall

⁴⁶Alva Noë, *Action in Perception*, (Cambridge, MA: MIT Press, 2004), 194.

⁴⁷Varela, Thompson, and Rosch, *The Embodied Mind*, 22.

⁴⁸Varela, Thompson, and Rosch, *The Embodied Mind*, 3.

⁴⁹Hutto and Myin, *Radicalizing Enactivism*, 123.

victim to overextending our everyday folk-psychological schema — applying notions where we shouldn't and assuming the existence of properties of the mind where they don't belong.”⁵⁰

There is no “truth” to perception through engagement between individual and environment because it is simply inappropriate to assess an ongoing activity in those terms. Perceptual experience need not require locating any transfer of information. Enactive cognition is much less ‘intellectualist’ than on other accounts. Enactivism, it is argued, is therefore more primary, and should be the basis for any account of consciousness. This is a radical position, even for enactivists, called Radical Embodied Cognition (REC). It does raise the issue, however, that formal accuracy conditions are less compatible with mind-body interplay than with RTC approaches.

As mentioned earlier, enactivism is a theory mostly known for accounting for ‘online’ perceptual experience that accesses features involving the immediate surrounding environment. Embodied theories, therefore, lack a positive account of hallucination like the kind offered by RTC supporters. Hutto and Myin (2017) do mention briefly what an enactivist theory of hallucination might incorporate. They argue that an account of perceptual error would have to lack content, for in accounts of non-veridical perception, it is the conflict between the content of what one knows and the content of what one sees that are at odds with each other.⁵¹ The two states of mind, however, can only come into conflict with one another if they each possess intrinsic contents that disagree in what they claim. A more appropriate account of error would have to focus on the behavior of the individual and seeing whether the agent's behavior is

⁵⁰ Hutto and Myin, *Radicalizing Enactivism*, 134.

⁵¹ Hutto and Myin, *Radicalizing Enactivism*, 124.

abnormal or inappropriate for the action that they are trying to perform.⁵² While I agree with this passage, there is definitely more to be said if we are to create an account of hallucination that incorporates bodily perception. Hutto and Myin, unfortunately, do not explain in great detail what illusory experiences would look like, nor do they mention hallucinations at all in their explanation of perceptual illusion. The account I offer in chapter two incorporates elements of Hutto and Myin's argument but there is a lot left they leave unsaid here.

Enactivists could also argue that hallucinations are unconscious perceptual states that are non-representational even if regular perceptual experience is representational. This, however, provides the added challenge of explaining how hallucinatory episodes are unconscious states.⁵³ This does not seem like the most efficient, nor convincing, strategy to pursue, for it is already contentious to argue that dream states are unconscious, let alone waking moments of perceptual error.⁵⁴ Bence Nanay (2010) suggests a broader version of this argument, suggesting that hallucinations and veridical perceptions are fundamentally different "psychological kinds".⁵⁵ One has a genuine relation to the object of perception and the other does not. This argument, however, is not defensible from the enactivist point-of-view without having to reconcile 'veridical', or true, perceptions with dynamic perceptions that cannot be rendered either true or false. An enactivist account of hallucination will have to resemble something akin to the position mentioned by Hutto and Myin.

⁵²Hutto and Myin, *Radicalizing Enactivism*, 126.

⁵³ Nanay, "Perceptual Representation/Perceptual Content", 7.

⁵⁴ See chapter three for more information on dream states. This argument would also require that creating a non-representational account of hallucination would, in fact, require an account of average representational perception. The strategy that Nanay acknowledges here would actually be more detrimental to the enactivist theory of perception than helpful.

⁵⁵ This is an argument common for disjunctivists, a type of non-representationalist position that stresses the direct relationship between object of perception and agent. That is not to refute the use of representations as mental content in the formation of beliefs, desires, thoughts, etc. Nanay, "Perceptual Representation", 241.

Another approach to hallucination for an enactivist supporter is to argue outright that hallucinations are not objects presented to the senses, and therefore *not* a perceptual activity. This hinges on what Noë calls his *General Theory of Access*, where even objects that are not immediately present to the perceiver can still be sensed as a type of perception. Noë's theory of perception, however, is directed towards explaining how agents can engage in successful action through the use of cognitive tools, and only really offers a negative metaphysical account of hallucination, in the sense that hallucinations do not offer an actual object to be actively engaged with. He argues that where there is no existing object, there can be no access of genuine availability.⁵⁶ False presence is not a type of presence, and the apparent visual experience of a non-existent object is not a species of perceptual awareness at all.⁵⁷ Hallucinations for Noë are therefore the breakdown of perceptual experience. So while Noë provides a detailed explanation of how perception is embodied, he does not offer a way of explaining the link between certain embodied features of cognition and perceptual error. The theory underestimates the successful components of hallucinatory perception qua perceptual activity. Solely by labeling hallucination as a "breakdown of perceptual experience", this strategy is not helpful in trying to uncover what hallucination is.

1.3: Conclusion:

As presented in this chapter, RTC supporters currently have the strongest response to perceptual error, by appealing to the mental contents of perception to describe the experience. Important features incorporated in the RTC explanation is the existence of an objective world separate from the individual, ready for perception that can be verified as either objectively real or false. Because representations are present in veridical and non-veridical perceptions alike,

⁵⁶Alva Noë, *Varieties of Presence*. (Cambridge, MA: Harvard University Press, 2012), 27.

⁵⁷Noë, *Varieties of Presence*, 44.

hallucinations differ from true representations as the perception corresponds to an existing object in the realm of public access, and also in terms of how the experience qualitatively feels different from having a veridical perception.

On the other hand, enactivist theories offer a different account that portrays the agent as a dynamic factor co-constituting their consciousness, as well as their environment. The presence of objects in the visual field is important, but the objects do not correspond to some verifiable true or false judgment, as vision is constantly changing based on the information feedback between the individual and environment. While presenting a strong case for immediate successful perception, enactivists cannot appeal to the content of perception to explain the phenomenon of hallucinatory experience, and so must use an alternative model to accurately present perceptual error. Embodied theories do have the explanatory burden of demonstrating how it is agents have hallucinations given the fact that visual perception for these supporters is the direct perception of objects, and hallucinations are typically defined as “seeing things or hearing things that are not there”.⁵⁸ If an enactivist account is possible, the result would not only be a more complete theory of embodied cognition, but also a stronger argument against the necessity of representation in cognitive processes. An embodied theory better demonstrates how it is that agent- and object-contingencies work together to present perceptual error, and also avoids the “hard problem of consciousness”. By starting with observable phenomena and first-hand accounts, embodied cognition is the best theory to explain how perception works in everyday life.

⁵⁸Sacks, *Hallucinations*, ix.

Chapter Two: A New Definition of Hallucination

As we saw in chapter one, Representational Theories of Content (RTC) argue that the brain assembles hallucinatory experience from mind-created imagery, as the content does not correspond to any objectively existing object. This model, however, is severely mistaken. RTC approaches face severe challenges, but continue to hold a privileged place in the literature due to long-standing tradition. In stark contrast, I propose using an enactivist approach to highlight key features of hallucination as an “online” visual experience that is also able to dodge serious concerns faced by RTC defenders. *Enactivism* has the explanatory power to argue how it is that agents are able to perceive objects directly through sensorimotor perception, thereby avoiding the “hard problem of consciousness”. Creating an accurate account of hallucination will require the removal of representation entirely from the perceptual phenomenon.

An enactivist account of hallucination does, however, frame experience in terms of success and failure. Recall Alva Noë’s specific theory of enactivism. While he does not believe that illusions or hallucinations correspond to any object or object-contingency, his theory still frames action and perceptual access in terms of success. Successful perceptual action will occur when the agent’s sensorimotor skills work together with the object contingencies in the environment. Perceptual failure will require that either the agent does not possess the requisite sensory skills or the object contingencies are not accurately perceived. An agent who hallucinates is experiencing a perceptual error, which can be identified through the use of the perceptual skills of the agent. Discerning the difference between a successful perception and a perceptual error will come down to examining the hallucinatory item with other features of the environment, which entails the use of other senses, to determine whether the item can be interacted with. Since perception is an active process, vision requires that the agent engage with

the object of perception by looking and assessing its position, its place in the visual field, whether or not it responds like objects typically behave under scrutiny, etc. Recall Charles Lullin's case from chapter one. In the case of the well-dressed men, the figures were silent and did not offer anything else other than mere visual interaction. Lullin came to realize that the men were hallucinatory if he went to navigate through the immediate scene. Because Charles Bonnet Syndrome is typically characterized by a lack of visual ability in patients, Lullin might have realized that his visions did not make sense with the rest of his visual field, given that the visual field was poor where the men were very detailed. The men also did not speak, or emit any sound, which is highly unusual given that even clothing can rustle and bodily noises are common. Failed object contingencies will not integrate with the presence of other features of the environment, like the kind gathered from other sense modalities. Perhaps the hallucination lacks clarity, or cohesion with the rest of the scene. If a hallucination does not change perspective when the agent reaches out to touch a hallucinated object, the experience is rendered a perceptual error, as the visual item under consideration does not behave like other object contingencies. In section 2.3 I will discuss in more detail how the immediate environment is a factor in hallucination, but first we have to consider why the enactive model is more appropriate than RTC accounts.

2.1: Comparing the two Models of Perception

An enactivist theory of hallucination is radically different from the standard approach, and many might be left wondering why it is that we should accept this new theory. Daniel Collerton et al. suggests that using an internal theory of content would mean that all perception is at least partially hallucinatory, since, on those views, the mind assembles all perceptual information, even when those perceptions correspond to an external object. In other words, supporting a theory of content creates the conundrum of defining veridical perception for the

psychologist.⁵⁹ By claiming that all perceptions with content are “partially hallucinatory”, representationalists are left to explain to what degree are perceptions ‘furnished’ by the mind, and how is this furnishing different for successful and failed perceptions? Philosophical cases are straightforward, as hallucinations and illusions are defined based on the amount of existing properties are perceived. As we will see with empirical cases, actual hallucinations and illusions are not so clearly defined.

This is the first of several arguments that I will make to demonstrate that psychological evidence directs us towards accepting an embodied approach to hallucination. Claiming that there is a difference between illusions and hallucinations demands an account of why they are different. Given scientific data, hallucinations and illusions share so many features in common that the difference cannot be explained by even referring to the content of the hallucination – the only real difference lies in the matter of degree of perceptual error. Perceivers also employ the same visual responses to both hallucinations and illusions in order to determine whether they are erroneous. Framing perception in terms of success eliminates the false dichotomy between illusion and hallucination, providing a more accurate account of perceptual error. While some researchers such as Dominic ffytche and Katalin Farkas, support what seems to be an action-oriented representationalist view, their findings also support non-representationalist positions.⁶⁰ I also try to undermine the representationalist argument by demonstrating that hallucination and illusion are not two different types of experiences.

⁵⁹Daniel Collerton, Rob Dudley, and Urs Peter Mosimann, “Visual Hallucinations” in *Hallucinations: Research and Practice*, edited by J.D. Blom and I.E.C. Sommer. (New York: Springer Publishing, 2014), 78.

⁶⁰ Action-oriented representationalism is the use of representation in action-oriented behavior. Unlike classical representationalism, the agent’s perceptual system is (i) action-specific, (ii) egocentric, and (iii) intrinsically context-dependent.⁶⁰ This approach to cognition synthesizes the key features of embodiment with representational systems. Michael Wheeler, *Reconstructing the cognitive world: the next step* (Cambridge, MA: MIT Press, 2005):195-200.

To demonstrate how hallucinations can fit into the enactivist framework, I also describe how hallucinations make use of feedback from the immediate environment, a key feature of the enactivist theory but neglected by RTC accounts. Participation from the agent is evident in the way that the agent uses cognitive skills to ascertain the hallucination's status in the performing successful or failed activity. Perceptual theories of content, on the other hand, suppose that the environment appears pictorially to the perceiver, so a representational approach would have a difficult time accounting for how the environment feedback affects perceptual error.

I then explore the palpable differences between hallucinations and 'visual imagery', like the kind used in reflection and "offline thinking". In RTC arguments, the representations used in imagination are similar to the kind used to explain hallucinatory experience, both are the product of a lack of actual perceptual stimulation. No object is apprehended through perception, these theories argue. By cleaving these two types of cognitive skills, I hope to show that representational arguments for imaginings do not apply to hallucinations. Instead, hallucinations and illusions are more akin to successful perceptual experiences due to the behavior of the patient having a perceptual error.

2.2: Illusion and Hallucination as the same kind of experience

Representationalists, especially in epistemic arguments about the nature of perception, separate hallucination and illusion into two different types of phenomena. The distinction usually relies on the content of perception and to what degree either experience incorporates the existence of actual objects. For illusions, the agent mistakenly attributes a property to the object where no such property is possessed.⁶¹ Hallucinations, RTC supporters argue, typically do not correspond to any independently existing object at all. Philosophical hallucinatory experiences

⁶¹ Logue, "Disjunctivism", 3; Noe, *Varieties of Presence*, 60; William Fish, *Perception, Hallucination, and Illusion*. (Oxford: Oxford University Press, 2009), 146.

are oftentimes reduced to **total hallucination**, cases where the agent cannot a priori discern the difference between a veridical and non-veridical perception. Hallucinations in reality are very rarely so fully encompassing. One feature that I will be adopting from the philosophical tradition, however, is the full rationality assumption (at least as rational as other fully functioning agents).⁶² It is imperative to keep in mind that perceptual error does not necessarily entail delusion. Some delusional illnesses are also accompanied by hallucination, but if the rational capacities are fully intact, there should be no reason why the agent is not able to pick out instances of perceptual error. Assuming full rationality makes it easier to predict what any reasonable hallucinating agent might do given their scenario. That way we can say with confidence that agents are able to use their other senses to determine a perceptual error from a successful perception.

It is also possible to distinguish between different types of illusion. Certain types of illusion are perceptual error, others are not really illusions at all. Some might argue that certain illusions, like **optical or physical illusions**, appear illusory simply because of environmental conditions that alter the typical form of perceptions. Sticks appearing as if bent underwater, or M.C. Escher's mathematical lithographs, might best exemplify illusions like the ones explained here. There is nothing wrong with either the object of perception, nor with the perceiver's visual capabilities. Optical illusions are not perceptual errors, because if the agent incorporates all of the detail from the visual field, the bent stick is seen as responding to environmental factors that make sense given how we understand the world to work. Enactivist theories, and even some RTC supporters suggest that context plays a large part in how one views certain objects.⁶³

Optical and physical illusions are often considered illusions as such because certain physical

⁶²Fish, *Perception, Hallucination, and Illusion*. Farkas, "A Sense of Reality", 400.

⁶³Embodied theorists already cited in chapter one. Fish, *Perception, Hallucination, and Illusion*, 75.

conditions affect the perceptual existence of certain scenes. All agents can experience the distortion of a stick in water given a certain perceptual environment.⁶⁴ By building up the required perceptual skills, individuals easily overcome illusions of this type, much like they can discern distance and vantage points. William Fish argues that these types of illusion are very different from **cognitive illusions** that require some contribution from the perceiver, like when an individual mistakes a stick for a snake.⁶⁵ These are the types of illusions I am considering when I talk about perceptual error. **Cognitive illusions** and **hallucinations** are the same kind of perceptual error, only differing in their intensity.

As seen in the introduction, enactivists think of visual presence not just in terms of correspondence to objects, but also as a function of the way that components of the visual field interact together. Varela, Thompson, and Rosch write in “the Embodied Mind”:

“colours [or other sensible properties] are not perceived in isolation from other attributes, such as shape, size, texture, motion, and orientation... ‘The ‘movement’ [that we feel] refers to structures in our perceptual interaction, in which we form unified images and trace out relations among the various elements in the work.”⁶⁶

The interaction has a physical presence but is not a component that can be isolated by itself. Enactivism can provide further ways to conceptualize the two experiences over and above the mere correspondence that RTC theories offer. First, that the experiences often co-occur together, the actual medical literature repeatedly treats them as similar perceptual errors, and finally, agents respond to illusions and hallucinations using the same management skills.

⁶⁴ Fish, *Perception, Hallucination, and Illusion*, 148.

⁶⁵ Fish, *Perception, Hallucination, and Illusion*, 150.

⁶⁶ Varela, Thompson and Rosch, *The Embodied Mind*, 162. Also incorporates a quote from Mark Johnson about Kandinsky, discussing how elements in visual art work together to create ‘motion’. From Mark Johnson, *The Body in Mind*, 84.

2.2.1: Hallucinations and Illusions Vary in Intensity and Co-Occur

Medical examination and categorization blurs the distinction between illusion and hallucination, making it more difficult to tell the two types of perceptions apart metaphysically. The link between hallucination and illusion becomes blurred when in the medical context. Dominic H. ffytche and Oliver Sacks both agree that hallucinations can be broken down into either simple or complex perceptions. **Simple hallucinations** are composed of shapes, colours or patterns, but lack the structure of fully formed images or scenes.⁶⁷ **Complex hallucinations** are fully formed, where the patient sees people, animals, or scenes in vivid detail.⁶⁸ It is not at all uncommon that someone suffering from perceptual error will experience a mixture of both types of perception, and even types of other visual phenomena such as repetitions, distortions, or elaborations of features present in the environment.⁶⁹ Simple and complex hallucinations can also occur during the same episode, meaning that perceptual error fluctuates anywhere between vivid scenes and a lesser distortion of ‘reality’. When does a hallucinatory period end and give way to the beginning of an illusion?

Perhaps a schema based on illness might provide a more effective categorisation. ffytche also employs a second category system that divides hallucinatory symptoms according to the type of illness the patient could be suffering from. Patients rarely develop more than one type of hallucinatory disorder, so each type of hallucinatory experience is diagnosed based on a different neurological basis⁷⁰. Using this system, there are three different categories. First there are syndromes that accompany illnesses like Charles Bonnet syndrome, as described in chapter one, which range in vividness but are silent and static. The second kind of brain anomaly that affects

⁶⁷ Sacks, *Hallucinations*, 10.

⁶⁸ Sacks, *Hallucinations*, 10.

⁶⁹ Sacks, *Hallucinations*, 15; ffytche, “The Hallucinating Brain”, 59.

⁷⁰ ffytche, “The Hallucinating Brain”, 60.

patients are hallucinations of animals or figures that occur with other sensory hallucinations, like if a talking hippo tries to communicate with the patient. These types of hallucination are often associated with false beliefs as well.⁷¹ The third type of hallucinatory experience includes illusions, afterimages, and trails⁷². ffytche ultimately concludes that hallucination and cognitive illusion appear as a ‘family of disorders’ and are not easily discernable. For example, polyopia (the experience of seeing multiple copies of the same object simultaneously in geometric patterns) can be diagnosed as either a hallucinatory or illusionary disorder.⁷³ Regardless of the classificatory system used to separate types of hallucinatory experience, some of these simpler hallucinations are what RTC supporters have been calling illusions.

What case studies really suggest is that perceptual errors can range in intensity, and that the boundary between “complete hallucination” and mere “illusion” is much closer than we think.⁷⁴ As we have seen, cognitive illusions and hallucinations are both, functionally speaking, system errors — they are not merely contextual, but arise from some ‘breakdown’ between agent and environment, and there is no reason to maintain that hallucinations are categorically distinct from illusions in terms of functionality. Metaphysically, the two kinds of perceptual error seem to be the same experience.

Philosophers of perception are typically worried about epistemic skepticism and, in the case of ‘pure’ hallucinations, experiences are treated as indiscriminable from veridical

⁷¹Patients who hallucinate due to a mental illness are also included in this category, however, I would like to focus on cases where agents have their full rational capacities entailed. In “A sense of Reality,” Katalin Farkas points out that philosophical arguments of hallucination are often too removed from reality by bracketing cases to individuals who are purely rational. While I realize it might be paradoxical to argue that hallucinations need to be portrayed more realistically in the philosophical literature, I also seek to demonstrate how the reasonable individual assesses and adapts to their conditions. ffytche, “The Hallucinating Brain”, 60.

⁷² ffytche, “The Hallucinating Brain”, 60.

⁷³ Ffytche, “The Hallucinating Brain”, 59.

⁷⁴Collerton, 782.

experiences.⁷⁵ As Katalin Farkas (2013) argues, however, real hallucinations are rarely a perfect copy of reality and most patients can tell the difference between veridical and non-veridical experiences⁷⁶. By blurring the boundary between hallucination and illusion, it becomes nearly impossible to distinguish the two experiences by their correspondence to external objects. Instead of focusing on content, and focusing on perceptual success instead, the separation of cognitive illusion from hallucination is revealed as the empty distinction that it is. There are a lot of perceptual experiences that could be classified as either illusion or hallucination, depending on which taxonomy one is using. Instead, consider both as species of Perceptual Error. This solution rids us of the unnecessary metaphysical distinction between the two.

Thinking of hallucinations and illusions both as the same kinds of perception is not a new argument. R. van der Zwaard and M.A. Polak agree that hallucinations, pseudo hallucinations, and other perceptual disturbances cannot reliably be differentiated from one another.⁷⁷ The experiences should be pictured on a spectrum instead. This would explain why it is hard to tell the two kinds apart metaphysically. For a true account of hallucinations, therefore, we should focus less on the metaphysical differences between hallucination and illusion, and instead develop accounts that support actual scientific data.

Another reason hallucinations and illusions should be considered the same type of perceptual error is that cognitive illusions and hallucinations often co-occur together. In a case study by Oliver Sacks, he notes a patient who, when speaking to her doctor, will see the doctor's beard gradually spread out over his entire face.⁷⁸ What is interesting about this case is that the hallucination begins as a successful perception. This is challenging for the RTC camp, for now

⁷⁵Farkas, "A Sense of Reality", 399.

⁷⁶Farkas, "A Sense of Reality", 401.

⁷⁷James Scott, Barry Nurcombe, and Mary Jessop, "Hallucinations" in *Encyclopedia of Adolescence* ed. by Roger J.R. Levesque (New York: Springer Publishing, 2011), 1246.

⁷⁸Sacks, *Hallucinations*, 15.

they have the burden of explaining at what point the perception changes from veridical, to falsely attributed features (illusion), to a falsely attributed object (hallucination). Hallucinations, however, are typically defined as perceptions where there is no perceptual object *yet* Zelda's case is clearly hallucinatory. The perceptual experience becomes something more, challenging the traditional distinction between types of error based on their relation to independent objects in the environment. Cases like Zelda's straddle the boundary between illusion and perception to the point where the distinction becomes arbitrary.

2.2.2: Using the Same Strategies to Overcome Illusion and Hallucination

Not only does it make sense to think of all perceptual errors as belonging to the same spectrum, but patients also use identical strategies to manage both cognitive illusions and hallucinations. In order to determine if either an illusion or hallucination is a successful visual perception, the agent needs to assess how the misperception is incorporated with other features of their visual field. Oliver Sacks notes that even though perceptual errors are located in 'external' space, they are marked by a lack of interaction; "they are always silent and neutral – they rarely convey or evoke any emotion*."⁷⁹ Perception is an active experience, and the sensed presence of objects in the visual field is characterized by the response of the agent's perceptual system. Hallucinations and illusions behave differently than what agents already know from experience, and since both are "weeded out" as unsuccessful perceptions, it makes sense to treat both illusions and hallucinations as the same kind of perceptual error.

Some cases, like the static images of Charles Bonnet patients, are relatively easy to compare with other features of the visual field. Occasionally, interaction with hallucinations becomes a bit more complicated. Daniel Collerton and Urs Mosimann explain that some

*when vivid hallucinations of humans or animals appear. This case is an example of the hallucinations suffered for patients with Charles Bonnet syndrome.

⁷⁹ Sacks, *Hallucinations*, 27.

misperceptions behave closer to successful perceptual forms, maintaining perspective as the agents move and rotate, suggesting strongly that representations are view-invariant.⁸⁰ The hallucinations can change with perceptual movement so that the object of the misperception behaves as if it were ‘truly there’, and Collerton argues that, “hallucinations occur when the sensory input predicted from a [hallucinatory] scene ... provides a better match for the actual input than does the scene without that element”.⁸¹ By changing one’s spatial relationship with the misperception, the object might behave as if it were truly an element of the environment and even integrate better than the scene *sans* hallucination. Enactivism does not just use visual-spatial relationships to assess objects of perception, but stresses the use of the body as a whole. Using multiple sensory modalities together will eventually reveal a hallucination as an unsuccessful perception. The agent will realize by reaching out to touch an illusion or hallucination that the object is not actually available for full interaction. Even perceptual errors that exhibit *some* features of successful perception will not possess all of the features that a successful perception would. Consider a case study described by Collerton et al. in “Visual Hallucinations”: patient A.B., suffering from macular degeneration, described her hallucination as taking the form of a giant canyon. She would have to step over the edge to get to her seat. A.B.’s other hallucinations were equally vivid, and she would have to walk through things to get around them.⁸² In this case A.B. can clearly tell she is hallucinating because the objects of her perception do not behave in the same way her other perceptions would. It is not possible to successfully walk through a giant canyon, or through solid objects. Even though her hallucination visually behaves like successful perception when switching vantage point the type of error that A.B. experiences does not lend itself to performing successful actions.

⁸⁰ Collerton and Mosimann, “Visual hallucinations”, 785.

⁸¹ Collerton and Mosimann, “Visual hallucinations”, 785.

⁸² Collerton et al. “Visual Hallucinations”, 82.

Representationalism fails to make use of the body as a whole visual system. The agent, according to RTC, will see a hallucination, build an action plan (that may or may not) feature the hallucination, and then enact that plan. It will be difficult to ascertain the difference between a ‘veridical’ and ‘non-veridical’ experience if one is not permitted to have repeated exposure to the visual stimulus *or* to use other senses in perceptual planning. RTC can appeal to the phenomenal difference between veridical and hallucinatory experiences, maybe by checking for detail or by rationally concluding that the hallucinated object does not belong in the current environment. The use of all bodily abilities is completely left untapped by RTC supporters, entirely misrepresenting how it is that agents actually engage with perceptual errors.

2.3: Feedback from the Immediate Environment

Enactivist approaches have typically gained strength from appeal to the feedback between the immediate environment and the individual, sometimes called “structural coupling”. As seen in chapter one, however, RTC accounts of perception have been able to better explain “offline thinking”, processes that do not seem to require the immediate external environment so much as the ability to reflect and imagine. Hallucinations and visual imagery are often cited as types of cognitive behaviors that are more offline than immediate and active. Yet there are overlooked features of hallucinatory experiences that connect active, mindful thinking with perceptual error.

Visual preservations occur when perceptions replicate long after the initial image has dissipated.⁸³ Zelda, the same patient with Charles Bonnet Syndrome mentioned previously, also reported seeing images from the television after the program had ended.⁸⁴ This is an instance where “online” feedback can directly impact the experience of a hallucinating individual. The

⁸³Sacks, *Hallucinations*, 19.

⁸⁴Sacks, *Hallucinations*, 19.

moving images presented to someone with a neurological disorder can not only cause hallucinatory experience, but also impact the experience of perceptual error itself. Zelda did not see animals or lines or geometrical shapes, but figures from the program she had recently been interacting with.

Environmental impact on perceptual error also occurs in cases of repetitive task performance. Experiencing certain sensory forms leads to a familiarity with those forms, like in the case of “musical eyes”.⁸⁵ In order for an agent to have a hallucination of sheet music, the person would need to have encountered sheet music before in successful perceptual experience. The hallucinations are informed through the agent’s prior experience with music, so much so, that the skills acquired during perception in musical studies bleeds into hallucinatory experience.

Oliver Sacks refers to these items as “visual ingredients” that are called upon by the brain to create hallucinations.⁸⁶ This implies that misperceptions are not created from pure imagination, but are heavily influenced by the lived experience of the person misperceiving.

A large proportion of people who report this type of hallucinatory experience are amateur pianists who avidly study and decode sheet music.⁸⁷ Sheet music is also very visually complex made of “dense”, coded information. Varela, Thompson, and Rosch would likely point out that a high level of ‘mindfulness’ (being present in the embodied self) is required in musicians, much as with athletes, which in turn leads to strong sensations later.⁸⁸ In a hallucinatory experience, the perceptual error will be discerned when there is an issue with the staff or notes, something with the typical structure of actual sheet music that gives away the hallucinatory perception as

⁸⁵ “Musical eyes” is a term that describes music-specific visual hallucinations where the patient reports seeing sheet music.

⁸⁶ Sacks, *Hallucinations*, 25. I acknowledge that Oliver Sacks holds a representationalist position and his use of the term “content” here aligns with his position. However, I use his research throughout to demonstrate that if examined close enough, it is accurate to say that hallucinatory perceptual experience actually exhibits a lot of embodied factors.

⁸⁷ Sacks, *Hallucinations*, 15.

⁸⁸ Varela, Thompson, and Rosch, *The Embodied Mind*, 22, 28.

erroneous. Patients suffering from “musical eyes” report that the hallucinations present the agents with pages of sheet music, only to discover that the sheet music cannot be read for playing. It is only when the patient finds that they cannot decipher the contents of the music that they understand that their experience is a misperception. Once again, this point reminds us that hallucinations are ultimately marked by their inability to aid in the completion of successful action. The vision of sheet music that does not make any actual sense, perhaps because of unintelligible staff instructions, is ultimately discovered because the agent is unable to play the music where they have has the requisite skills to do so. If the agent is not skilled in reading music, they would not be able to determine whether or not their perceptual experience is faulty, although presumably only people who have experienced sheet music before in their lives could hallucinate such things. While ffytche argues that anyone could have hallucinations of sheet music, “prolonged exposure to music increases the likelihood of ‘musical eyes’”⁸⁹ If this is true, actual hallucinatory experience suggests that there is a strong link between lived experience and engaged coupling when it comes to perceptual error.

What about cases where random individuals experience “musical eyes”, even if they are not avid musicians? Would this not weaken the argument suggesting that high levels of skill and concentration within a field lead to an increase in perceptual errors featuring that vocation? Sensorimotor skill contingencies can still accommodate worries about hallucinatory experience by demonstrating that agents are only able to perceive the forms that they have come to understand. All of the case studies used here are described and interpreted by the hallucinating patient, which demonstrates that the hallucinations have meaning for them. Meaning is generated through structural coupling, once again suggesting that enactivism can describe fundamentally what is happening when agents misperceive. In the cases of “musical eyes” in patients with very

⁸⁹ Sacks, *Hallucinations*, 15, n. 5.

little musical experiences, we can still say that the agent requires some minimal sort of experience with sheet music, enough so that the agent realizes that they know how to respond and describe the experience as they have it. Cases like the ones mentioned here stress the bond between active perception and hallucinatory experience, as the agent cannot just ‘create’ fodder for their misperceptions.⁹⁰

Increased exposure to certain stimuli also causes perceptual disturbances in individuals who spend hours avidly engaged in other activities as well. Up until now I have only cited examples of hallucination caused by brain or sense damage but even otherwise healthy individuals, for example, players exposed to videogames for several hours at a time, can experience perceptual error triggered by gameplay. Angelica Ortiz de Gortari and Mark D. Griffiths studied the effect of Visual Game Transfer Phenomena (VGTP), the transfer of gameplay experiences into other aspects of players’ lives. Gamers reported seeing different types of visual errors after playing certain games for long periods. The manifested symptoms not only include multi-sensorial errors, but also retinal sensations, perceptual distortions, and cross-sensorial experiences.⁹¹ Some cases were even triggered by contextual associations, such as searching for things, wanting to inquire for some type of feedback, conversing, and selecting talk/reply options in a menu (i.e. maybe on a cell phone, or other electronic platform).⁹²

⁹⁰It is true that even imaginative acts require “ingredients” from the agent’s environment but imagining is altogether a different sort of activity. As José Medina points out, imaginings are often enactments of visual experiences. (José Medina, “An Enactivist Approach to the Imagination: Embodied Enactments and “Fictional Emotions”. In *American Philosophical Quarterly* 50, 3 (2013), 320.) Imagining is a type of mimicking or imitating where perceptual skill, while also physical, is picked up from performing genuine activities. The mimicry of actual perceptual acts in imagining might provide an explanation as to why RTC theorists argue that the representation involved in visual activity is the same kind of representing that occurs when an agent imagines.

⁹¹Ortiz and Griffiths define retinal sensations as seeing videogame elements when eyes are closed; multisensorial experiences describe moments where visualizations are accompanied with other sensory modalities like touching, as when players report feeling controller buttons under their fingers when triggered by some other stimulus; perceptual distortions include “real-life” distortions based on the graphics of certain videogames, like seeing pixels after playing Pacman; Angelica B. Ortiz de Gortari and Mark D. Griffiths, “Altered Visual Perception in Game Transfer Phenomena: An Empirical Self-Report Study” in *Intl. Journal of Human-Computer Interaction* 20 (2014), 97-8.

⁹² Ortiz de Gortari and Griffiths, “ Altered Visual Perception in Game Transfer Phenomena”, 100.

Misperceptions ranged from simply seeing full environments in colour effects, trails and pixilation to more obtrusive visual obstacles like misperceiving one object for another.⁹³ Ortiz de Gortari and Griffiths concluded that, “the gamers did not just imagine or visualize images but actually saw images projected with video game content triggered by automatic associations”.⁹⁴ The duo concluded that the agent constantly tries to make sense of ambiguous visual perceptions and so incorporates skills learned in gameplay.⁹⁵ Hours of practice are spent honing perceptual-motor functions specific to gameplay environments that the agent then uses to make sense of “real-world” structures using skills based in detailed virtual environments. This study on VGTP exemplifies two ways in which hallucinations are impacted by enactive perception. First, repetitive stimulus creates a certain perceptual skill contingency that causes misperceptions. As in the case with avid gamers, the repetition of behavior strengthens certain visual and motor skills that are then transferred elsewhere. Perceptual adaptation occurs when exposure to a particular stimulus affects other types of experience, which explains why gamers (and piano players) misperceive after periods of study.⁹⁶ RTC supporters have no way of accounting for the transfer of visual skill to other aspects of life outside of game play.

Second, certain situated activities lead to the production of hallucinations and other types of misperception. Note that misperceptions occurred after triggered by some person-world interaction like searching for things and buying goods. The representationalist framework cannot account for the dynamic that leads to a hallucinatory trigger; they can only argue that there is no object corresponding to the impression. The enactivist approach has the power to explain

⁹³ Ortiz de Gortari and Griffiths, “Altered Visual Perception in Game Transfer Phenomena”, 101.

⁹⁴ Ortiz de Gortari and Griffiths, “Altered Visual Perception in Game Transfer Phenomena”, 104.

⁹⁵ Ortiz de Gortari and Griffiths, “Altered Visual Perception in Game Transfer Phenomena”, 102.

⁹⁶ Ortiz de Gortari and Griffiths, “Altered Visual Perception in Game Transfer Phenomena”, 95.

when/how a hallucination will be caused, as well as identify activities that lead to higher levels of perceptual error.

As demonstrated, hallucinations do not only occur in agents who have some sort of neural or visual system damage, but also is part of the average person's visual process. This suggests that the visual feedback between environment and agent is so crucial to perceptual experience in general that the role of perceptual error cannot be dismissed as a feature of "broken" cognitive systems. Providing a thorough account of hallucinations is paramount to finally determining what perceptual experience actually entails.

2.3.1: Mood and Hallucination

It has also been demonstrated that the tone of a hallucination can change with trauma or mood.⁹⁷ A patient of Oliver Sacks' named Rosalie was affected by the death of her close friend in the care home where she and her friend both resided. Suffering from Charles Bonnet Syndrome, Rosalie had previous visions of dancing people in Eastern dress, but after the loss of her friend, the woman's hallucinations became dark and reflected the loss that she felt.⁹⁸ Rosalie reported seeing men dressed in black suits staring at her silently, and she noted their ominous presence. Other patients have also sensed a change in their perceptions, depending on their level of anxiety or the time of day (night tends to bring about darker feelings).⁹⁹ Changes of perceptions with mood are called **mood-congruent** hallucinations, and are acknowledged by medical experts to be perceptual errors influenced by other physiological/environmental factors. This demonstrates that there is not a clear separation between hallucinations and 'veridical' perceptions, but that information from 'online' cognitive processes affects how patients perceive during their abnormal episodes. It is nearly impossible to separate the interplay between the

⁹⁷ Sacks, *Hallucinations*, 20.

⁹⁸ Sacks, *Hallucinations*, 20.

⁹⁹ Collerton et al., "Visual Hallucinations", 80.

agent/environment perceptual system in cases like Rosalie's. Just as bereavement can alter the perceptual error of an agent, some types of perceptual error also occur when the person borders on sleep, or suffers from bodily deprivation.¹⁰⁰ Recall that representational approaches to perception stress that the content of hallucinations do not correspond to objects in the external environment. This implies that some of the traditional theories would exclude the death of Rosalie's friend as a factor in the perceptual 'content' of her hallucinations. Clearly there is a stronger relationship between the environment and hallucinations than originally supposed.

2.4: Differences Between Hallucination and "Visual Imagery"

A large portion of representational literature takes for granted the assumption that hallucinations are the same type of cognitive activity as "offline", reflective experiences like imagining (also known as "visual imagery"). If hallucinations and imaginings are the same kind of experience, it is highly suggestive that the mind constructs content with the aid of very little external stimulus. Embodied cognitive theories argue that the environment and mind co-constitute one another, and therefore the environment necessarily factors into the perceptual schema. It has already been shown how environmental factors like repetitive tasks, skill-acquisition, and mood contribute to hallucinatory experiences but this is not enough to prove that perceptual errors are content-free. In conjunction with those arguments, I would argue that hallucinations are a different type of experience than visual imagery, and while it is beyond the scope of this essay to describe how imagination might be sensorimotor in nature, it is more than reasonable to suppose that hallucinations, and misperceptions broadly speaking, are still a type of active perception and fundamentally different from figments of imagination. In this section, I

¹⁰⁰ Collerton et al., "Visual Hallucinations", 80. I will explore the relationship between sleep and hallucinations in more detail in chapter three.

will explain several features of hallucination that set those experiences apart from representational content thereby undermining the RTC position.

2.4.1: The Voluntary Aspect

One distinction between hallucinations and visual imagery is the aspect of voluntarily being able to direct one's attention. Hallucinations, and misperceptions in other forms, are involuntary as no agent tries to have a failed perception. When describing the accounts of his patients, Oliver Sacks notes that the person experiencing the hallucinations has, "no consensual validation of their non-veridical perception because they are involuntary, uncontrollable, and may involve vivid and/or bizarre details".¹⁰¹ Vivid hallucinations can be disruptive and emotionally distressing to the point where individuals might go seek medical help. Imaginings, on the other hand, are thought of as being conjured up by the individual at any time, where the agent can guide their thoughts in any number of directions. If thoughts wander, the agent has the power to refocus.

ffytche agrees that all hallucinations are devoid of a sense of agency, and he uses the term **pseudohallucinations** to refer to what he calls "involuntary visual imagery".¹⁰² Unfortunately, ffitche also includes unwanted thoughts, beliefs, and desires as types of 'involuntary imagery,' which is directly opposed to the radical enactivism that I am discussing here.¹⁰³ I would not agree that involuntary visual imagery refers to reflections or imaginings that are persistent, but actually only to illusions and misperceptions.

Katalin Farkas also agrees that hallucinations and mental imagery are different types of cognitive actions, although she argues that mental imagery can be involuntary as well. The two

¹⁰¹Sacks, *Hallucinations*, x.

¹⁰²ffytche "hallucinating brain", 55; 57.

¹⁰³ His diagnostic test also incorporates two other features: vividness of experience, and locus (ie. where spatially the experience is located), which will both be explored later in this section. Ffitche, "The Hallucinating Brain, 55.

types of experiences are categorically similar, for just as one can redirect one's mental imagery, so too can an individual close their eyes to misperceptions.¹⁰⁴ Instead, Farkas employs resources from Anton Aggernaes' theory of hallucination. Voluntariness, according to Aggernaes, is "the feeling that it is easy to alter or dismiss the experience", and Farkas uses this definition to demonstrate that unwanted mental states are just as involuntary as hallucinatory perceptions.¹⁰⁵ Even if one is convinced that (i) there exists intentional mental states and (ii) those mental states can be undesired by the agent, the type of involuntariness of those mental states is very different from involuntary visual perceptions.

I do not agree with the definition that Farkas employs, as the 'easiness' with which one would alter or dismiss an experience is too vague to capture the essence of "involuntariness". There seems to be a fundamental difference between being able to create involuntary thoughts from perceptual errors, a distinction that Hutto and Myin identify (2017). The scope of voluntaries relies on "personal" and "sub-personal" levels of cognition. The personal level addresses concerns of what is expected from the level of sensory experience itself.¹⁰⁶ In contrast, the sub-personal level of perceptual activity focuses on what is at issue within the neural network and the ability to predict a pattern of sensory stimulation in part of the system (e.g. system parts like the retina, optic nerve, etc.).¹⁰⁷

Enactive autonomy is also used differently than personal-level autonomy. It is a technical term defined by O'Regan and Jan Degenaar used to describe self-producing and self-maintaining systems.¹⁰⁸ Since there is already autonomy implied in successful visual activity¹⁰⁹, the type of

¹⁰⁴Farkas, "A Sense of Reality," 410.

¹⁰⁵Farkas, "A Sense of Reality," 410.

¹⁰⁶ Hutto and Myin, *Radicalizing Enactivism*, 24. Andy Clark. "Vision as Dance? Three Challenges for Sensorimotor Contingency Theory" in *Psyche* 12 (2006), 4-5.

¹⁰⁷Clark, "Vision as Dance?", 5.

¹⁰⁸Jan Degenaar and Kevin J. O'Regan, "Sensorimotor Theory and Enactivism". In *Topoi* (forthcoming), 8.

¹⁰⁹Degenaar and O'Regan, "Sensorimotor Theory and Enactivism", 8.

non-voluntary action involved in perceptual activity is a fundamental kind, not the type of violation of autonomy when autonomy in the Kantian sense, as a violation of one's agency. When considering imaginings and reflection, cognition is working on the personal level, where perceptual errors like hallucinations work on the sub-personal level. Autonomy, in conjunction with other key characteristics, is clearly an element that distinguishes imagination from misperception.

2.4.2: Relation to the Senses

Another feature to consider is what Katalin Farkas calls “a sense of reality,” that perceptual errors alone possess. While I do not agree with Farkas' account of involuntariness, this other phenomenal aspect is quite compelling. Also inspired by the work of Anton Aggernaes, she suggests that hallucination has to be partly situated in one of the senses, whereas imaginings do not.¹¹⁰ Karl Jaspers' also distinguishes perceptions and images based on how hallucinations seem to appear in external ‘objective’ space whereas images are clearly situated in the ‘inner’ mind [sic].¹¹¹ Perceptions are detailed where images are not, and perceptions can also be constant and retained independent of will, where images dissipate and need to be re-created.¹¹² Compared to imaginings, no rational agent would assume that their “visual imagery” is in the realm of public access, but we should still not dismiss this criterion outright. Perceptual errors are experienced as part of the visual field, and where successful perceptions are shared among similarly situated observers, features of the environment can be said to have an air of ‘publicness’. Misperceptions seem to be located in the spatial region where I do not think that the same can be said for imaginings.

¹¹⁰Katalin Farkas, “A Sense of Reality,” in *Hallucination: Philosophy and Psychology*, ed. by Fiona Macpherson and Dimitris Platchias. (Cambridge, MA: MIT Press, 2013), 407.

¹¹¹Farkas, “A Sense of Reality”, 406.

¹¹²Farkas, “A Sense of Reality”, 407-8.

Just because an agent's experience has a certain phenomenal character (i.e. that their perception is rooted within one of the senses), this does not mean that the experience is *actually* derived from the senses. It could be the case that the patient erroneously attributes their hallucination to the senses than to a mental faculty that assembles representations. It is clear that in cases of total blindness, like with Charles Lullin's landmark case, patients report seeing vivid perceptual errors where their eyesight is so bad that little actual vision is possible. Yet this phenomenon can be explained in relation to skill acquisition, similar to what we have seen already with avid gamers and VGTP. Blind patients have active neural passageways where successful vision takes place, and the firing of neurons leads to flashes of perceptual error. Neurologically, hallucinations and successful perceptions are located in the same parts of the brain.¹¹³ Even Collerton and Mosimann, who are sympathetic to RTC, acknowledge that hallucinatory and veridical perceptions happen in the same brain areas.¹¹⁴ If misperceptions and imaginings can be separated into two types of cognitive skills, then the argument that some representationalists make for visual imagery cannot be the same kind of argument for failed perceptual experience.

2.4.3: Active Motion in Hallucination

Representational theories of perception trade off on the notion that "offline" thinking, like imagining and hallucinating, do not incorporate parts of the available environment, insisting that both type of states must therefore be heavily representational. In *Hallucinations*, Oliver Sacks notes that patients who hallucinate exhibit visible eye tracking movements, behavior markedly different from those experiencing mental states. Sacks writes:

"looking or scanning does not occur with imagined scenes; most people when

¹¹³ffytche, "The Hallucinating Brain", 53-4.

¹¹⁴Collerton and Mosimann, "Visual hallucinations", 783.

visualizing or concentrating on their internal imagery, tend to close their eyes or else to have as abstracted gaze, looking at nothing in particular.”¹¹⁵

This makes sense when we think of perception in terms of action-orientation. Using Noë and O’Regan’s terminology, the patient is using their sensorimotor skill to perceive object contingencies and this is why their eyes move rapidly about the spatial area. The body movements here provide the strongest evidence to suggest that imaginings and hallucinations are different – the agent responds to each in the way that they have learned to. An agent who is imagining forms a pattern of behavior specific to that type of cognition. With hallucinations, agents will try to engage with the misperception much like they would behave with cases of successful perceptions. What the agent comes to expect from the skills that they have acquired over their lifetime is what we should base the distinction upon. As can be seen, agents who are hallucinating respond to their perceptual error just as if it were successfully part of the visual field. The phenomenological feeling for the patient is that the presence of the misperception is sense-based and independent from them. The agent need not initially be able to tell that they are hallucinating, but after interacting with the objects, the agent will realize that they are having erroneous perceptual experiences. Contrast this once again with imaginings. The difference between the two states at least suggests that visual imagery and hallucinations cannot be sufficiently categorized together as the same type of “offline” experience.

2.5: Conclusion

By examining actual case studies of hallucinations, it becomes very clear why we should move towards using an enactivist model for abnormal visual perceptions. In this section, I have tried to weaken the RTC stance by offering a different account that (i) illusions and hallucinations are the same type of perceptual experience, (ii) demonstrates that perceptual errors

¹¹⁵ Sacks, *Hallucinations*, 4.

receive feedback from the immediate environment, and (iii) undermine the claim that agents exhibit the same physiological response to hallucinating as visual imagery. While I have provided several arguments in this chapter in favour of embodied hallucination as success-based perception, there are still several doubts that must be addressed. In the next chapter I will outline some implications that follow from accepting an embodied account of hallucinations, as well as some difficult challenges that the theory faces.

Chapter Three: Lingerin Concerns

Any philosopher coming from a representationalist perspective might still not be wholly convinced of the enactivist approach to hallucination, even though there is a strong connection between embodiment and misperception. In this chapter, I will address four lingering concerns, focusing first on the difference between veridicality and success, proposing two strategies available to the enactivist before opting for the second less radical alternative. Next, I consider the scope of hallucinatory experience. Criticisms of this kind focus on whether or not simple visual mistakes count as hallucinations, and may be rooted in having ‘cast the net too wide’ by overextending the definition of hallucination to include very simple perceptual errors. I also address concerns about the distinction between dream states and hallucinations, different from the argument separating mental imagery and perceptual error. Dream states exhibit some active perceptual features but are ultimately a different kind of cognitive activity. I hope to strengthen the non-representational account of perception by addressing some of these concerns.

3.1: Veridicality Claims and the Content of Perception

Critics might argue that one large problem with the enactivist model of hallucination is the claim that framing success in terms of sensorimotor contingency is just another way of saying that hallucinations do not correspond to any external object or presence. Saying that a perception is “successful” is just rephrasing “veridicality/non-veridicality” but keeping the concepts unchanged. What is success other than having a perception that accurately relates to features of the world?

3.1.1: Veridicality vs. Success

Veridicality and successful perception are distinct concepts. Veridical statements, or accuracy conditions, are entailed by the use of representational content. The representations that

are formed through the sense-plan-act model rely on the fact that visual perceptions correspond to an objective, external world. Without intentional content, like beliefs and ideas, accuracy conditions cannot be made. To make a judgment requires that a description can be made of the perceptual experience. I think that I see dancing men in the room, but they are not there and therefore I am mistaken. Throughout this project I have referred to the type of experience that patients are having, the figures they see and what those experiences feel like. Features like the vividness of detail, or the static character of a visual experience are used as evidence to suggest that hallucination is part of enactive cognition theory. When we talk about the experience of a hallucination, does this not also rely on the *content* of the hallucination?

Hutto and Myin's position, as mentioned in chapter one, is a specific type of enactivism that prevents the use of accuracy conditions or judgment. Like other strains, there is no intentional content within perceptions for the pair, added with the fact that the ongoing perceptual process defies propositional judgment. To allow veridicality claims would be to admit that perceptions have content that can be analyzed and reflected upon. Reflection on experience may come later as a different type of cognitive activity, but to say that a visual experience is 'about something' would require mental representations to make sense of the experience.

Radical enactivism also argues that the visual scene is not only an integration of all features present, but the overall presence that arises from the body-environment union. To speak of veridicality would be to admit that external features of the environment can be isolated as objects of perception, rather than to state that the perceptual activity is dynamic and not physical per se. Some elements of vision are physical, but the process is also immaterial, as it is an activity. It is much more difficult to make a judgment about an ongoing activity than it is to

make about the objective existence of an object of perception.¹¹⁶ For the radical enactivist, there is a difference between talking about what one experiences, and if that experience has representational content that can be ascertained as true or false. It is perfectly acceptable to talk about what a hallucinatory episode feels like, while also avoiding veridicality claims.

Hutto and Myin's position is also complicated by the fact that they do not believe in information exchange during perceptual experiences. Without information, the agent does not have any knowledge of their perceptual experience, which in turn implies that no propositional judgment is possible. This position, however, is simply unacceptable to many who insist that perceptual judgments can be made.

An alternative to the radical position would be to acknowledge that knowledge or information transfer is possible, but that the knowledge one gains from perceptual activity is "proto-conceptual", sensorimotor or tacit.¹¹⁷ The activity does not require a first-person description, but is understood when the agent grasps the relevant perceptual skills. Merleau-Ponty agrees, arguing that understanding perception is not to have a belief or idea, but to have understanding and to grasp.¹¹⁸ Recall from chapter one that RTC theorists criticize non-representationalists for supporting an account of vision as sensation and not perception. Enactivism does move beyond mere sensing to actual perception when the agent understands and interacts with their visual experiences. The phenomenon is best described by Noë (2012) as a

¹¹⁶ I recognize that it is not impossible to make judgments about the overall activity (ie. that I am currently gazing around the room), but judgments of perceptual accuracy are much harder to make during that activity (ie. to judge the size of the scratch on the wall). My perception of the scratch's size is going to change as I alter my position, and as I consider the size of the scratch relational to other scratches. I might think the scratch is quite obvious and very large, but then later reconsider. Its meaning will change for me.

¹¹⁷ Noë, *Varieties of Presence*, 69.

¹¹⁸ Merleau-Ponty, *Phenomenology of Perception*, 352.

“difference between thinking something as present and experiencing something as present.”¹¹⁹

Strong intentionality is not required to engage in successful activity.

Veridicality, a knowledge-based concept, is possible if the individual understands their perceptual experiences.¹²⁰ A non-veridical perception, defined under these terms, would be an experience that the agent cannot fully comprehend. Even non-hallucinatory perceptions would qualify as non-veridical if the agent failed to generate meaning from their experience. One can see a bent stick in water but fail to understand why it appears to be so. On the other hand, a person can hallucinate and understand their perceptual experience on the basis of their interaction with it. This second strategy allows for perceptual judgments but also distinguishes the success/failure metric I support from what it means to have a veridical/non-veridical perception. Non-veridicality here is to fail to grasp what a perception means, while success is being able to determine perceptual error where it breaks down at the functional level. An agent can still make sense of a hallucinatory episode, and by doing so, comes to understand their environment better.

For those who require an explanation of veridicality, the second alternative provides an explanation while also staying true to the main tenants of enactivism. It is crucial to understand that the enactivist model stresses the experience of the agent and how the agent navigates their misperception rather than on the centrality of truth-conditions that representationalist approaches support. Perception is grounded through the body so it makes sense to support a theory that

¹¹⁹ Noë, *Varieties of Presence*, 51.

¹²⁰Noë, *Varieties of Presence*, 73. I would also like to stress again that Noë uses both object contingencies and visual skill contingencies to explain how perceptual activity occurs. In his theory, hallucination does not correspond to a true object contingency, therefore becoming a non-veridical experience. As mentioned in chapter one, I do not agree with his negative account of perceptual error, but I do borrow his specific definition of veridicality here as it illuminates certain features of the proto-conceptual understanding involved in enactive perceptual experience.

prioritizes the agent's relationship outwards, not by starting from the objective presence of objects and their status in 'reality'.

3.1.2: Hallucination and Small Perceptual Errors

The skeptic of the enactivist hallucination approach will still likely be focused on the distinction between total, or encompassing, hallucination and smaller, somewhat inconsequential, perceptual errors. Individuals might allow that cognitive illusions and hallucinations are the same kind of error, but it is another thing to assert that very mild misperceptions also belong to the hallucinatory category. If these smaller perceptual errors are caused by a cognitive-related error, then hallucinations and small perceptual errors are on the same spectrum of phenomenon. The causal explanation for cognitive (but not optical illusions) illusions and hallucinations is identical.

Drawing the distinction between hallucination and a small misperception is obviously more difficult for the enactivist account, since other theories of hallucination draw boundaries between illusion and hallucination. Smaller misperceptions simply qualify as smaller illusions. Recall that an illusion can be defined in RTC theories as falsely attributing a non-existent property to an actually existing item.¹²¹ According to any stances of perception that adopt this definition, a misperception would clearly be defined as a type of illusion, even if the misperception is brief and minute. Where illusions and misperception are identifiable solely by attributing a mistaken feature, that evaluative basis is lost for the enactive approach I defend. There has to be another criterion that sets simple misperceptions apart.

It is inevitable that problems will arise on the farthest edge of the perceptual error spectrum, which maps on to what we typically take to be hallucination. When specifically comparing illusions and misperceptions, it would be intuitive to suggest that smaller errors are much closer

¹²¹Logue, "Disjunctivism", 3.

to successful perceptual action. The ramifications of even the smallest of visual mistakes, however, could lead to large action-oriented complications (i.e. mistaking a red stop sign for a green one).¹²² The only difference between hallucination and smaller misperceptions is the relative space that the error takes up in the visual field, and for how long. The agent running the stop sign is much sooner going to reorient around their misperception than the person whose visual field is bisected with moving cartoons. The distinction between small misperceptions and total hallucinations is not necessary.

3.2: Auditory hallucinations

It is not uncommon for RTC supporters to use cases of visual and auditory hallucination interchangeably to demonstrate that the experience of perceptual errors is conceptually different from ‘true’ experiences.¹²³ For the duration of this project, my initial account of enactivist hallucinations primarily used research that focused on one type of perceptual error, visual misperceptions. RTC supporters might argue that the theory I have developed is fine for visual hallucinations, but does not address other sensory hallucinations, or hallucinations that integrate more than one sensory modality.

While the notion of isolated sensory hallucinations (even auditory ones) do not pose any special challenge to an enactivist approach to perceptual error, there are really interesting cases where the error of several sense modalities have been used to create a case against non-representational approaches to perception. Misperceptions of this kind arise from irregularities caused by multimodality integration. **Cross-modal integration** occurs when senses work together to create a unity that is more representational than correspondent to the actual object of

¹²² Assume in this case that the cause for the misperception is not an optical illusion, like the kind explored in chapter two, but that misinterpreting the stop sign is caused by brain disruption. It is very plausible that a sign could be misinterpreted based on environmental factors, a mistake that any similarly placed agent might make. In this case, however, I am still comparing hallucinations and errors that follow from the same functional explanation.

¹²³ Coates, “Hallucinations and the Transparency of Perception.”

perception.¹²⁴ Stronger cases of integration are called **cross-modal illusions**, and suggest that representations are at work to create a sensible unity, making sense of sensory information that is otherwise disparate.¹²⁵ Ventriloquism is cited as strong evidence that agents assemble illusions when sense data from different modalities is integrated improperly. Individuals visually see a puppet's mouth moving and attribute thrown sound to the puppet.¹²⁶ Cross-modal integration might be categorized as a perceptual error, or as successful perceptual activity depending on case-by-case analysis. Accepting this explanation means that non-representational multi-modality could not be used to explain how it is that perceptual errors are united into comprehensive perceptions.

Noë and O'Regan, however, also use sensory integration to support their non-representational sensorimotor account of perception. They argue that integration occurs as the body learns perceptual skills. These skills, as mentioned in chapter one, are strengthened through practice, and the individual learns to understand perceptions in a way that is meaningful. Attributing a thrown voice to a ventriloquist dummy occurs when agents see a mouth moving and assumes that sounds must be coming from the moving mouth. This arises because typically that is how verbal communication works and agents have developed perceptual skills that match faces to voices. Both RTC supporters and enactivists alike can account for cross-modal illusions but refuse to accept the explanation from rival positions. Regardless of which argument sounds most convincing, it is clear that the use of multiple modalities is required in order to discern hallucinations and illusions from successful perceptions. If one sense is providing the agent with

¹²⁴Casey O'Callaghan, "Perception and Multimodality" in *The Oxford Handbook of Philosophy of Cognitive Science*, ed. by Mohan Matthen. (Oxford: Oxford University Press, 2015), 96.

¹²⁵ Examples of crossmodal illusion include ventriloquism or something known as the McGurk effect, when viewers are shown one sound but listen to another, causing the perception of a third "compromising" sound. O'Callaghan, "Perception and Multimodality", 99.

¹²⁶ O'Callaghan, "Perception and Multimodality", 98.

information of one kind while another is giving the agent radically different information, it is clear that features of the environment are not integrating. At least one feature of the cognitive system is creating a feedback error.

The likelihood of experiencing a multimodal hallucination is very rare. Collerton et al recognize that even when they occur, the erroneous perceptions appear with a greater intensity of colour and sound.¹²⁷ That is to say that even if the scope of the hallucination is total, the *content* of the misperception will give it away as illusory. ffytche explains further that there is not a lot of scientific research on multiple sense hallucinations, so currently there is much speculation as to whether sensory integration is representative in nature.¹²⁸ The phenomenon and supposed challenge to enactivist theories is still worth acknowledging here.

3.3: Dream States

Although I have tried to demonstrate that visual imagery and hallucinations are two different cognitive activities, I have avoided addressing the nature of dream states. Dream states exhibit several features akin to hallucinations, including what appears to be bodily interaction during sleep ‘perception’. In this section, I explore some basic differences between the two states, arguing that the two are essentially different cognitive activities.

Daniel Collerton and Urs Peter Mosimann insist that hallucinations and dreams are the same type of experience.¹²⁹ In both dreams and hallucinosis there is a lack of sensory input from the eyes to place a visual context around the perception. The lack of sensory input suggests to RTC supporters that the mind utilizes representational powers to supplement the sensory feedback. ffytche also agrees that it would be difficult to diagnose the difference between

¹²⁷Collerton et al. “Visual Hallucinations”, 80; 82.

¹²⁸ffytche “The Hallucinating Brain”, 54.

¹²⁹ Daniel Collerton and Urs Peter Mosimann, “Visual hallucinations” in *WIREs Cognitive Science* 1(2010): 783.

hallucinations and dream states, posing a problem that is unique to the enactivist approach to hallucination.¹³⁰

One obvious difference between waking and dreaming is that waking states are also marked by reflexive intellectual powers not available to agents in dream states.¹³¹ Cognitive activities, like performing autonomous well-reasoned action, are only functions that can be performed when awake, abilities available to those that hallucinate but not to those that dream.¹³² Individuals can reflect on their dreams later, but only rarely have the chance to deliberate in dream states.

Vivid dreams, unfortunately, pose a very pressing challenge, as these kinds of dream states straddle the barrier between stages of full alertness and sleep states. I mentioned briefly in chapter two that some patients have experienced hallucinations when coming out of sleep but it really becomes difficult to draw the boundary between lucid dreams and hallucinations. In a lucid dream, the dreamer is aware that he/she is dreaming and can consciously influence the dream state.¹³³ Lucid dreams typically occur when the dreamer realizes either that the situation is not a part of waking life or notices some recurrent pattern/scenario, and they are likely to occur in the moments leading up to wakefulness.¹³⁴ This poses an obvious challenge to theories that argue that reflective thought is only available in waking states, for the lucid dreamer can make decisions and plan to accomplish actions in the lucid dream state.

Lucid dreaming case studies suggest individuals exhibit active engagement in their dreams. This could be because agents try to use skills acquired from their waking experiences to

¹³⁰ ffytche, “the hallucinating brain, 59.

¹³¹ Sosa, “Dreams and Philosophy”, 11; Nagel, “Dreaming”, 116.

¹³² Sosa, “Dreams and Philosophy”, 14.

¹³³ Tadas Stumbrys, Daniel Erlacher, Miriam Johnson and Michael Schredl. “The Phenomenology of Lucid Dreaming: An Online Survey”. In *The American Journal of Psychology* 127, 2 (2014), 191.

¹³⁴ Stumbrys et al. “The Phenomenology of Lucid Dreaming”, 200.

navigate their dream states. Varela, Thompson, and Rosch (1992) also suggest that agents use visual skills within the dream world. The team suggests that certain forms of experience exhibit themselves in dream space, like when dreams incorporate colors.¹³⁵ This suggestion counters arguments that claim events in the dream world are isolated and do not actually occur in the external world¹³⁶, but this distinction is simply not true if the agent uses their perceptual skills in dream states. Even in REM-stage dreams, one of the largest similarities between the two states is that some agents can be very active sleepers, moving their body in response to what they are experiencing in their dream state. The person might jerk or call out, and these types of experiences exhibit the same active behaviors that are anticipated from successful perceivers. Since enactive perception is marked by extensive body-world interaction, it is highly suggestive that the body behavior in dreaming is indicative that some perceptual activity is taking place. While it is true that the external environment bleeds into the dream realm, Owen Flanagan argues that dreams are still ultimately insensitive to outside ‘noise’ but biologically, a completely isolated sleep is not safe in terms of survival mechanisms.¹³⁷

There are also several other pieces of evidence that suggest that dreams and hallucinations or illusions are not the same type of phenomena. The most obvious boundary between dream states and hallucinations is one occurs when the agent is asleep and the latter occurs when the agent is awake. This argument is not convincing to all dream theorists, as some still consider the boundary between being awake and asleep a very fragile distinction. It might be possible that one can dream while semi-awake, or that dreams can become hallucinatory as one awakens.

¹³⁵ Varela, Thompson, and Rosch, *The Embodied Mind*, 166.

¹³⁶ Ernest Sosa. “Dreams and Philosophy”. In *Proceedings and Addresses of the American Philosophical Association* 79, 2 (2005), 15; Thomas Nagel, “Dreaming”. In *Analysis* 19, 5 (1959), 115; T.F.M. Hunter, “The Difference Between Dreaming and Being Awake”. In *Mind* 92, 365 (1983), 82.

¹³⁷ Owen Flanagan, “Deconstructing Dreams: the Spandrels of Sleep”. In *The Journal of Philosophy* 92, 1 (1995), 24.

One difference is that hallucinations are very rarely fully immersive experiences, and typically only affect two sensory modalities at most. Dream states, however, are completely encompassing and the link between the immediate physical environment and the dream state is weaker than perceptual error during waking moments. With the exception of fully encompassing hallucinations, perceptual errors occur in a visual field that also incorporates other successful elements of perception.¹³⁸ Dreams, on the other hand, are always going to be fully encompassing, and while dream objects give the impression of existing in space, to say that an object is located “within a dream” is not a spatial location. Objects in dream states may have the appearance of being spatially located, but dreams are a state and not a location.¹³⁹ Talking of dream objects may seem like a perceptual experience, McDonald argues, because we falsely ascribe perception verbs (like “see”, “hear”, etc.) to these non-perceptual activities.¹⁴⁰

Some enactivists might argue that dream states are also a type of perceptual error because acting in dreamscapes does not actualize into any successful perceptual action for the fully alert agent. For dreams to be a sub-category of perceptual error, however, another metric would be needed to determine how to evaluate dream states, as it is incomprehensible to use success to measure dream states as well as hallucination. Dreams are not a misperception, McDonald argues, because it neither conforms nor fails to conform to “criteria of physical reality” — dream states are neither successful nor unsuccessful models of the external world.¹⁴¹ Dreams are part of their own dream space and are not created to mimic the external world. It makes sense that beings receive some feedback from the environment into their dream state. While I can be sure

¹³⁸Margaret McDonald, “Sleeping and Waking”. In *Mind* 92, 365 (1983), 203-4; Nagel, “Dreaming”, 112.

¹³⁹McDonald, “Sleeping and Waking”, 205.

¹⁴⁰McDonald, “Sleeping and Waking”, 209-10.

¹⁴¹McDonald, “Waking and Sleeping”, 207.

that dream states and hallucinations are two types of activities, it is beyond the scope of this project to determine what exactly dream states might be.

3.4: Conclusion

In this section, I have highlighted some interesting concerns and implications of the enactivist approach to hallucination. The key to grasping the enactivist approach is to shift perspectives from object-centric theories to approaches where perception is rooted in the body and understood at a pre-conceptual level.

Throughout this essay, I hope to have demonstrated how it is that embedded cognition, and enactivism in particular, can account for ways in which perceptual errors relate to “online” cognition. It is crucial to remember that perceptual activity is grounded in the body as a system, and even if an individual’s visual system is faulty the rest of the cognitive system can be used to navigate and interact with features of the world. Aside from bringing us closer to a true account of hallucination, the approach also offers one more positive implication: the hallucinating individual can overcome their perceptual error. They are limited, but not completely without other cognitive resources. It is possible to identify, and circumvent, perceptual error. This hope is not offered by the RTC position. Only an enactivist account can truly account for how everyday people engage with their perceptual limitations. An accurate account of perceptual error is crucial, not only for understanding perception as the most basic cognitive activity, but that which also provides the basis for all other cerebral activities.

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