

Naturalizing propositions, cognitive complexity, and animal minds

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ABSTRACT

In this paper I mount two attacks on the current naturalized accounts of structured propositions. The first attack concerns the exclusion of the possibility that the contents of animal mental states can be propositional due to King's view relying on syntactic structure and language users to ground propositions. The second attack concerns the cognitive complexity required for quantified propositions and what that means for the possibility that the contents of animal mental states.

After characterizing the pitfalls of the current views, I forward a multiply realizable view of propositions in chapter two. I also discuss how, on this view, propositions could arise from perception. Doing this allows me the machinery to answer the objections posed to the views from chapter 1. I discuss how we can acquire logical connectives through perception which can be later used to compose more complex propositions. I also suggest, in a similar fashion, how we can grant cognizers quantified propositional contents. I then go on to elaborate on how my view is better fit to deal with the worries and criticisms forwarded in chapter one.

Once I detail my positive view, I discuss some of the natural objections that arise for perceptual realization of propositions, namely how we can explain the presence of propositions which have as a component, referents that pick out seemingly unperceivable objects/entities. I do this by reiterating the more general view I forward in chapter two, that propositions are multiply realizable.

CHAPTER 1

Introduction

In what follows, I will mount two attacks on the current naturalized accounts of structured propositions. The first attack concerns the possibility that the contents of animal mental states can be propositional and how certain views of cashing out propositions will not metaphysically support this prospect. The second attack concerns the cognitive complexity required for quantified propositions and what that means for the possibility that the contents of animal mental states.

After characterizing the pitfalls of the current views, I will forward a multiply realizable view of propositions which allows me to characterize a specific kind of realization, specifically, perceptual propositions, in chapter two. Doing this will set up the ground work that I will lean on to show how, on this view, we can come to acquire logical connectives which can later be used to compose more complex propositions. I will also suggest, in a similar fashion, how we can attribute quantified propositional capacities to thinkers. I then go on to elaborate on how my view is better fit to deal with the worries and criticisms forwarded in chapter one.

Once I have detailed my positive view, I will develop a way to answer one of the most obvious objections that arise for a perceptual view of propositions, namely how we can acquire propositions which have as a component, referents that pick out seemingly unperceivable objects/entities. I do this by arguing that since propositions are multiple realizable, the endorser of this view can hold that complex propositions can be secured using the same methods Hanks or Soames use.

Naturalizing Propositions, Cognitive Complexity, and Animal Minds

Propositions are taken to play important functions in a number of different areas of human mental life. The meaning of declarative sentences of different languages, the content of psychological attitudes such as beliefs and desires, and bearers of truth and falsity are all examples of roles that propositions seem fit to fill. To give a few examples of how these functions can be fulfilled by positing propositions, let's first take propositions to be the content or meanings of sentence types. Doing this will allow us to explain how a sentence in English such as 'The dog is ugly' and a sentence in Spanish like 'El perro es feo' can mean the same thing. If both sentences have as its content the proposition that the dog is ugly, then they will have the same meaning. We take declarative sentences to represent things about the world, where we can check the world to see that the facts that the linguistic item represents obtain. What the sentence represents would be a proposition and the truth value is a property of the propositions represented by the sentence.

Throughout this paper I will assume that a structured account of propositions is true. The structured propositions view can be seen as the replacement of sorts to the view that propositions are sets of possible worlds (although this is still controversial). I do not wish to disregard Russell's earlier structured account, but to distinguish it from the structured account forwarded by Scott Soames (1985, 1987, 1989), Nathan Salmon (1986a, 1986b, 1989a, 1989b) and Jeffrey King (1995, 1996, 2007, 2009). The possible worlds view of propositions held that the meaning of a proposition was the set of possible worlds where that propositions is true (Kripke, 1972) (Kaplan, 1977). This, of course, led to a devastating problem for the possible worlds view. Take, for example, the proposition 'A bachelor is an unmarried male'. This proposition is necessarily true since

being an unmarried male is a necessary precondition to being a bachelor. What this means is that the proposition that expresses this will be true in all possible worlds and moreover, the meaning of said proposition will be the set of possible worlds where the proposition is true. The problem arises when we draw our attention to any other necessarily true proposition. As it turns out, any necessarily true proposition will be true in all possible worlds and, consequently, the meaning of all necessarily true propositions will be the set of all possible worlds (the same set).

This, of course, is a very unattractive consequence, especially in light of propositions being the objects of propositional attitudes. Given a widely held assumption, if a person believes a proposition, then they would believe any necessarily equivalent proposition. For example, if someone expressed their belief with the statement that ‘the dog is ugly’ it would not be a problem to substitute that statement with ‘el perro es feo’ since they express the same proposition. This would result in being able to substitute a person’s belief in a necessary statement with any other necessary statement due to all of these statements expressing the same proposition since, under this view, all necessary statements are just the set of worlds where they hold true (namely all of them). The structured propositions view remedies the worry above by allowing that the composite parts of a proposition to contribute semantic values recoverable from the propositions expressed. This results in a view that tells us that ‘a bachelor is an unmarried male’ and ‘I am identical to myself’ express different propositions, since the constituents of these propositions are distinct from one another.

The structured propositions view has been defended and used as a foundation to formulate different positive accounts of propositions by Peter Hanks, Jeffrey King, and Scott Soames. To say that propositions are structured is to say that propositions are

constituted by more fundamental units. However, the structure of propositions is argued to mirror that of natural language sentences. A declarative English sentence is composed of fundamental parts. These will include lexical items that stand for an object, predicate, and some sort of relation between the two. For instance, 'The tree is green' is composed of a lexical item that refers to some tree, a lexical item that refers to the property of being green, and the relationship that the tree has with regards to the property, namely, the 'is' of predication. Like the declarative sentence, propositions can be argued to be composed of more fundamental units as well as possess a structure mirroring language. Viewing propositions this way would explain language and thought having the structure we observe it to have.

Recent theories concerning the nature of propositions have taken a naturalization route and by doing so, turned traditional theories of propositions on their head. Where it was once thought that propositions existed independently of mental states, it is now been forwarded that the reverse is true. Propositions, as argued by the likes of Hanks, King, and Soames, arise from the mental acts of agents. Propositions obtain their representational capacities from the representational features of tokens of primitive mental act types.

The project of naturalizing propositions, if successful, allows the positing of propositions to sit comfortably in serious empirical vocabulary, much like indispensable unobservables in other empirical fields outside of cognitive science or psychology, such as the electron in physics. However, we are confronted with new challenges that non-naturalized accounts were not met with. For example, now that propositions not only play an explanatory role, but are now targets of empirical explanation, situating an explanation of propositions into a broader scientific paradigm will be necessary.

Additionally, naturalized propositions will also make empirical predictions. Satisfying these predictions will also need to be factored into a naturalized account.

An unattractive consequence of some recent theories of propositions is the exclusion of animal minds from the attribution of propositional capabilities¹. A theory that reduces propositions to complex cognitive functions, like language, does so at the expense of a theory that can accommodate the possibility that less cognitively complex animals can have propositional capabilities. This seems to motivate a desideratum for a theory of naturalized propositions. The desideratum is as follows:

Desideratum:

A theory of propositions should be able to include the possibility of non-human animal propositional capabilities.

A good theory of propositions should be able to account for the development of non-human animal propositional capabilities. Put another way, a good theory of propositions should be able to tell some story about how the contents of non-human animal mental states are/can be propositional (in the case that they turn out to be so).

Additionally, in the development of this paper, I aim to provide a positive account of naturalized propositions which takes seriously the attribution of complex propositions to non-human agents, such as animals. This will, hopefully, provide a more palatable view about the cognitive capacities of animals.

The following outlines, in detail, how recent theories of propositions fail to provide an adequate theory by not delivering on meeting the demands of the desideratum

¹ I mean by “propositional capabilities”, the capability for a mental state to have as its content a proposition. This would include mental states like beliefs and desires being directed towards propositions. But also will include representational perceptual states having propositions as their contents.

that I argue for as well as not providing a theory which can supply a satisfactory way to account for the possibility that the contents of animal mental states are propositional.

Animal Inclusivity

The idea of mental states other than those intimately related to spoken language (such as perception) being propositional has been argued for and against in multiple areas of philosophy, from philosophy of perception to epistemology. Moreover, an attractive view of propositions should give an account that explains the emergence of propositions in linguistics, cognition, and perception² as well as be sympathetic to the science in which propositions ends up belonging. If a theory does not take into consideration (or isn't obviously amendable to) the possibility that propositions also act as the content of mental states that occur in less cognitively demanding areas outside linguistics, then it leaves itself open to an unsurmountable problem. This seems to be the case with King's view.

In New Thinking about Propositions, Jeffrey King markets the *sentential relation* as being the unificatory glue that binds the propositional constituents, as well as the explanation as to how they inherit their truth value (King, Soames and Speaks, 2014). Take, for example, the sentence "Jill jumps." For King, we as linguistic animals, and more specifically English speakers, encode the lexical items "Jill" and "jumps" as having a specific semantic value. For example, "Jill" directly refers to Jill the person. So, "Jill" will encode the semantic value (Jill the person). In this context and in the English language, the concatenation of "Jill" and "jumps" is interpreted as the ascription of the

² In linguistics, propositions serve as the meanings of sentences, as well as, the way in which we can successfully translate between languages. In Cognition, propositions are taken to be the contents of our thoughts (Bill THINKS that the cat is on the mat). In perception, propositions are taken to be the contents of our perceptual states.

property of jumping to Jill. Because of this, the sentence will be true iff Jill in fact jumps and false iff Jill does not.

King's view does give us a rather simple story about how these propositions inherit their truth-conditions and, because of this, it generates appeal. However, a problem quickly arises. The sentential relation affording propositions their truth-function will not prove effective for propositions that occur in cognition and/or perception. King's view is categorically isolated from giving a more encompassing account of propositions. For this reason, we should prefer a view of propositions that affords us a (for lack of a better term) unifying theory.

It seems to be generally agreed upon that the content of belief is propositional. Beliefs are taken to be a paradigmatic example of a propositional attitude. If we can grant this, then it can be argued that there will be instances of propositions that serve as the contents of mental states in areas that are not intimately related to natural/spoken language. If it is true that there are mental states which contain propositional contents that are not identical with the ones that are intimately related to language, then propositions are not derivative on syntactic relations of ascriptions. Since King's view espouses the idea that propositions are in fact derivative on syntactic relations, then we will have reasons to doubt King's view.

More formally, argument is as follows:

P1: Propositions are present in some mental states not identical to the mental states independent of language.

P2: If propositions are present in cognitive operations not dependent on language, then propositions are not derivative on syntactic relations of ascriptions.

P3: If propositions are not derivative on the syntactic relations of ascriptions, then King's view is false.

C: King's view is false.

Concerning the justification for the first premise, theorists such as Scott Soames, Peter Hanks, and Jeffrey King who work on the naturalization project have agreed with this characterization of mental states outside the ones necessary for language. Moreover, Soames and Hanks acknowledge the above characterization of cognition and perception and, in conjunction with its theoretical antecedence in terms of its relationship with linguistic propositions, utilize it as a way to unify the propositional domains (linguistic, cognitive, and perceptual) in their theory. However, there may be another case to be made to motivate this point.

The attribution of propositional attitudes (or psychological states which take propositions as the contents in which the psychological state is directed) to human agents seems to be justified by way of their explanatory power in explaining rational behavior. For example, a person fleeing from a spider seems to be reliably explained by this person believing they are in danger because they also believe that spiders are venomous. Here it can be said that the content of the persons belief state or psychological attitude is a proposition, namely **"I am in trouble"**. The proposition figures as the object of the attitude of belief in this situation. The propositional attitude, in turn, plays a role in guiding the behavior of the agent.

It is non-contentious to have the view that the contents of belief states are propositions. Since, propositions are taken to be the referents of ‘that’- clauses and what the psychological state of belief is taken to be directed at takes the form of ‘that’-clauses, the contents of a belief state are taken to be propositional.

As for the second premise, the ascription of beliefs to non-linguistic animals has proven to be a very useful tool in the prediction of behaviors, much as it is with humans. My cat’s approaching her food bowl can be explained by her believing that there is food in her food bowl. In this situation, the propositional attitude is believing, and the contents of this attitude is the proposition “**there is food in the bowl**”³. The attribution in this context sufficiently explains the behavior of my cat when it is coupled with the attitude of desire and the content of this desire being “**to eat the food in the bowl**”. The fact that the attribution will explain the cat’s behavior will be true regardless of the presence of any language users as well. To drive this point further, animal behavior being trackable, predictable, and explainable by the attributions of propositional attitudes will be true even in a world where there existed no language users. Take for example, a world of just cats and dogs. Their behavior will not be importantly different as to make the attributions of propositional attitudes useless. Moreover, without the presence of an alternative view of the description of animal mental life, belief ascription may be indispensable. For these reasons it seems safe to believe that animals in fact are possessors of propositional attitudes. If this is true, then beliefs are metaphysically distinct from the kind of complex cognitive functions essential for King’s view. And given that King’s view requires the presence of language users to ground propositions we would be forced to say that a vast

³ It is suggested that animals perform acts of categorization; King will concede to this. From this, it does not seem to be too far of a leap to suggest that they also use very simple beliefs in reasoning. This is not to concede to King’s view, but only to show that animals can perform the functions necessary for primitive propositions.

array of non-human animals are excluded from the possibility that the contents of their beliefs are propositional due to these creatures also not having the capability for language (or possibly complex enough language capabilities).

Premise 3, since King's view claims that propositions emerge from the syntactic relations of lexical items with certain semantic values, then propositions which arise otherwise (specifically in non-linguistic ways) provide a counter-example to his view. Perhaps it could be argued that the syntactic relations should be understood in terms of some mental language (think Fodorian Mentalese) and so King's view can be said to explain the emergence of propositions in all mental domains since the syntactic relations are occurring between mental representations that have semantic content and not exclusively ones that occur in the production of natural language. However, agreeing with Tye (2014) this may be a large pill to swallow. On the most popular view of perception, perception is viewed as a propositional attitude. Assuming King holds that the syntactic relations of some language factor into the content of a propositions, then syntactic relations would also factor into the content of perceptual experiences as it does for other propositional attitudes like beliefs and desires. However, this seems counterintuitive and not in alignment with the phenomenology. This is to say that perception may not operate in the same manner that King needs for propositions to when discussing language. This leaves King's view only sufficiently explaining natural language propositions. From this, it may be reasoned that King's view misses the mark on providing a view of propositions that gives an account of all or most kinds of propositions.

Do Complex Propositions Require Complex Cognition?

The views of Peter Hanks and Scott Soames are not as theoretically bottle-necked as Jeffrey King's view seems to be and do provide a more encompassing theory. Their reliance on a primitive cognitive state as the basis for the intentional features we know propositions have lends itself to the explanation of the variety of domains in which propositions are thought to be realized.

On Soames' and Hanks' account, this primitive cognitive event type is the simple act of an agent predicating a property of an object (of course, the way this is cashed out is a little different for either theorist). Nonetheless, the intentional features of this cognitive event type are constituted by the fact that an agent is representing an object as being such-and-such. This is supposed to explain the representational/intentional features that we take propositions to exhibit.

In line with the overall project of naturalizing propositions, Soames' and Hanks' are offering a theory of propositions in which the explanatory roles occupied by propositions and propositional attitudes are reversed. Traditionally, propositions were taken to be the primary bearers of truth and falsity, as well as, act as the source of intentionality that would be derived from them in the form of propositional attitudes such as believing, desiring, knowing and so forth. Soames characterizes their view about the derivative intentionality of propositions in the following way: "propositions are representational *because* of their intrinsic connection to inherently representational cognitive events in which agents predicate some things of other things" (Soames, 2010) Arguably, this construal can fit well into the widely accepted representationalist view in the philosophy of perception and so may generate appeal.

Given that the requisite mental acts that give rise to propositions are simply token acts of predication, the attribution of propositional content to non-linguistic mental states of animals seems justified. Even more so in Hank's portrayal of the nature of predicating as being the simple act of categorization. Hanks even discusses the ubiquity of categorization abilities in the animal kingdom (Hanks, 2015). If it is true that animals can carry out the cognitive acts essential to propositions, then meeting the first desideratum will not be a problem for the Hanks/Soames account. However, the primitive acts of categorization/predication that animals such as dogs exhibit, namely categorizing objects into the set of objects that smell like food, will only allow us to attribute simple propositional contents to such animals. These simple propositions include monadic property propositions, or those that the property is predicated of one object. Yet, as it turns out, the simple characterization of predication/categorization offered to us by the Hanks & Soames account will not alone be enough to grant us more complex propositional contents, namely, quantified propositional contents. Hanks will need to introduce a more cognitively taxing operation to make sense of said propositions.

Since the act of predicating is taken as the primitive cognitive mental state that gives rise to propositions, the way in which more complex propositional statements (such as quantified statements) will be brought about will be due (in some shape or form) to predicating. Where a simple proposition, of say, 'the tree is green' is arrived at by the agent performing the primitive cognitive act of predicating the predicate *green* to the object *tree*, the more complex propositions 'all trees are green' is arrived at by performing the cognitive act of predicating of the property of being *green*, the property of being *instantiated by all trees*.

Understandably, this seems to be an explanatorily sufficient story to tell with regards to these more complex propositions since we can entertain the idea of predicating properties of other properties (or predicate a second-order property of a first-order property). Nevertheless, it is not clear whether animals are cognitively sophisticated in the way that Hanks' demands. A good theory should not allow the determiner of this question to come down empirical minutia, but clearly tell us that animals can have quantified propositional contents. This is due to the evidence that animals can have mental states whose content is quantified propositions. Unfortunately, Hanks theory cannot allow this.

Revisiting our discussion of attributing beliefs to non-linguistic animals, we will recall that the attribution of propositional attitudes to animals, in the face of no alternatives, plays an indispensable role in the prediction and explanation of animal behavior (as it does for human behavior). This will remain true for quantified beliefs as well. There will be specific behaviors that will warrant the positing of animal beliefs that will have as their contents, quantified propositions. For example, a dog can be commanded to bark if they smell a treat in one of the two boxes in front of them. If the dog is lead around both boxes and does not bark, we can then explain the behavior of the dog by attributing, to the dog, the belief that no boxes have treats in them. This will translate to the belief that it is not the case that there is a treat in the boxes. Though, it is not clear that the dog performed the act of predicating of the set of boxes the predicate of not having a treat. This requires some argumentation that Hanks does not provide and perhaps attributing this type of cognitive task to animals may not be an attractive consequence.

To provide a different avenue of evidence for this idea, it has been established as a reasonable view to hold that perception is existential. This would be in contrast to a particularist view which holds that when we perceive some object, we perceive the particular object in front of us and just something with some properties. This allows for a direct road from an animal being a perceiver to quantified propositional content being attributed to them. However, this avenue seems closed off to Hanks given that, if perception is existential, the explanation as to why other areas of mental life aren't remains. Since the explanatory prior state of categorization or predication is present in these other areas as well. In other words, why some propositions are existential, and others aren't will need explaining.

In summation, I argue that a theory of propositions should not preclude the possibility that the contents of animal mental states are propositional. Given the attribution of propositional attitudes to animals for predicting/explaining behavior just as it is done in the case of human agents, we may be motivated to say that the contents of animal perceptual states (a species of propositional attitude) is propositional. King's view of propositions seems to falter on providing a theory which can be amenable to this. Additionally, it seems that it should be the goal of a naturalized theory of propositions to provide a theory that can account for the attribution complex propositions to non-human cognizers, by not setting the standard by which we come to grasp complex propositions too high.

CHAPTER 2

Multiple Realizability and Perceptual Propositions

As discussed, we now need a theory that delivers where current theories failed to do so. This theory must grant the propositional capacities of animals in order to answer to the desideratum mentioned in my criticism of King's view. If propositions exist, their existence should not be contingent, solely, on the existence of human minds. This theory must also allow for an account of quantified propositions that, if needed, can be cognitively simple enough to allow the attributions of such propositional contents to animals. Doing this will provide a simpler account of quantified propositions than that of Hanks/Soames. Moreover, there must be some story told about how propositions on any view can and do play the functions historically attributed of them. These functions include but are not limited to: being bearers of truth and falsity and guiding reason. These are the functions I will discuss in this chapter.

In this section, I want to forward a positive view that, I hope, offers the metaphysical machinery able to meet the desideratum in my criticism of King's view. This would mean, a theory that identifies the mental state or event which gives rise to propositions with mental states that are available (meaning the mental state is one that we can reasonably say some complex enough animal species can carry out)⁴ to the kinds of minds we were worried about in chapter one. This in turn would provide the explanatory path from the target mental state to propositions. However, the target mental state would be unproblematically attributable to animal minds. In order to meet this challenge, I will explain how propositions can be realized in perception. I take it that perception is a

⁴ Where the scope of "complex enough" ranges over the cases of animal minds that we have reason to believe (due to behavioral studies/ neurophysiological evidence) can justifiably be attributed with propositional contents.

mental state that we will unproblematically attribute to animals. Moreover, I will attempt to show how this theory will give a simpler and less cognitively taxing story about how an agent can come to acquire quantified propositional contents. However, a preemptive discussion regarding a more fundamental metaphysical backdrop with which the positive view I offer can be understood is in order.

Here I suggest that propositions are properties of representational states. What this means is that propositions can come about whenever a mental state plays the right functional role, namely being representational. Adopting this view of propositions will allow us to make sense of the different realizations of propositions that we see in mental life. The dispositions to be realized in different physical substrates has also been called multiple realizability. The idea of multiple realizability was introduced, by Hilary Putnam (1967), as a way to argue against the identity theories of the early 1900's and in favor of a functionalist view of mental states. The intuition that mental states, like pain, can be realized in neurophysiologies completely different from that of a human or even organic life forms suggests that identifying that mental state with some neuro-chemical state would not suffice as a complete explanation of the presence of pain, in general. To say this of propositions is to say that there are multiple mental states that can perform the function required to give rise to propositions.

In the context being discussed, we can say that propositions are multiply realizable due to the occurrence of propositions in seemingly distinct mental domains. The proposition *that* something-is-the-case can be found to occur in perception. For example, Krissy can perceptually represent some object x and perceptually attribute some property y to it. A proposition with the same content can be realized in cognition when Krissy entertains some object x in her mind while simultaneously attributing some

property *y* to it. This can also be realized via the language faculty. Using lexical items to represent objects in our environment with which we attribute properties to. This view can also predict that propositions can be realized outside the mind by a mind when we write or pictorially represent object and properties.⁵

I would like to take a similar stance to the likes of Hanks and Soames⁶ on the question regarding the intentional inheritance of propositions. On their views, a proposition is intentional due to its connection to some cognitive state which is itself inherently intentional. Where my view departs from theirs concerns what kind of state that the propositions are intimately connected. Instead of forwarding Hanks-style categorization we would be better suited to replace it with representational states in general. Propositions are intentional because they are properties of representational states which they themselves are inherently intentional. That is a preview of the general view I endorse and what I take to be the fundamentally prior mental state that grounds propositions. However, to specifically handle some of the criticisms I forward to the views mentioned in chapter one, I will need to elaborate on a specific realization of propositions; that being propositions that arise in perception. Animals are perceivers, and so, will be candidates for having propositional contents. I will also argue that perception

⁵ Here it is important to note that what I take to be a proposition isn't the fact *that p*, but rather the state that represents *that p*.

⁶ Another similarity with the views of Hanks, King, and Soames is that I will assume a compositional and generative principle for propositions. A propositions structure should matter in how the meaning is conveyed. This is most easily shown in natural language propositions. For an example, a proposition could take this form <Lbs>. Here the capital L signifies the love relation between the two objects that come after it. As written, this will be translated as Bob loves Sue. If the structure did not matter, then we could with similar ease come to the idea that the meaning of the above proposition is Sue loves Bob. The component parts represented in both examples, however, the mode in which they appear will matter. The generative principle is the generalization of some observational evidence concerning how thought and language work. Once acquired, names, logical connectives, concepts, and time stamps can be recalled and put together in mind to create an infinite amount of novel thoughts or sentences of some language.

can offer a less convoluted view concerning the acquisitions of quantified propositional contents.

An important question regarding my view is what the “connection” that propositions have to perceptual states is? In what follows, I will attempt an answer. However, before I can give my account there must be some ground work laid. I will need to motivate a representational theory of mind. If we can agree on a representational theory of mind, then it will be easier to motivate a propositional theory of perception. This view, I will argue, will allow us to deliver where Hanks, King, and Soames do not.

Representational Theory of Perception

To motivate a representational theory of perception, and for the purposes of showing how perception can be propositional, let’s entertain some person (name her Becky) and a perceptual scene where Becky looks at the bowl that she used to serve herself a helping of oatmeal. It seems to Becky that an off-white colored bowl, a foot from her head, is empty of the substance that once filled it. A key feature of the perceptual state that Becky finds herself in is that it seems that what Becky saw could have been wrong. It seems that the mental state once tokened in Becky becomes assessable for accuracy. What seemed to Becky as an empty bowl, actually turns out to be a bowl with about $1/3^{\text{rd}}$ the serving she started with (perhaps due to the color of the bowl and oatmeal being too similar to tell apart). So, what seemed to be an empty bowl is actually $1/3^{\text{rd}}$ full. From this we can say that Becky’s mental state, when perceiving her bowl, was not accurate with regards to the matters of fact. To say that Becky’s perception could be wrong is to suggest something concerning the nature or metaphysics of Becky’s perception.

In order to elaborate on this further, I will need to allude to a possible construal of the relationship between Becky and the external environment we take her to perceive. After doing this I will be able to show how this view, given the intuition (perhaps obvious fact) that her perception is fallible, is implausible and how representational theory of perception does a better job of making sense of our intuitions on the fallibility of perception. It can be said, given a relational account of perception, that what Becky sees is a result of Becky being in a certain relationship with the objects and properties in her external environment. Just for the sake of explication we can say that this relationship is an awareness relationship of some sort. Becky is using attentional resources to direct her perception at certain items in her environment. What this allows Becky to do is attend to the properties of the object. The bowl seems off-white in color because Becky is aware of the off-white quality of the bowl.

Viewing perception this way seems to do a good job of making sense of veridical perception. However, what could be said of the fact that how the bowl seemed to Becky, in her perception, could have been wrong? If Becky only attends to the object's properties in order to perceive them, then how can Becky be related to a property that the object (bowl) does not have, namely emptiness? This account of the nature of perception does not account for inaccurate perception.

Additionally, one of the strongest reasons to accept a representationalist theory of perception is due to its handling of hallucination.⁷ Relational theories of perception, again, hold that perceivers stand in certain relations to environmental objects. This accounts for ordinary cases of perception (veridical). However, the question regarding

⁷ However, this is not by far the only reason to hold it, as evidenced by Dretske (1995), Lycan (1996), Byrne (2001), Siegel (2010), and Pautz (2010)

what one is aware of in a hallucination quickly arises. For representationalists, a perceiver attends to mental representations of external objects in conscious perception. These, in turn, can be accurate or inaccurate representations of external affairs. If one hallucinates a pink elephant, then one is entertaining the mental representation of a pink elephant. This mental representation will turn out to be non-veridical/inaccurate. The ease with which a representationalist account can explain hallucination is evidence in its favor.

To reiterate, Becky's perception having the capability of being accurate/inaccurate or veridical/falsidical seems to suggest something about the nature of perception. The property of being true or false is suggested to be inherent in propositions. The representational view of perception can accommodate propositional content in perception just like it accommodates propositional content in propositional attitudes. Understandably, viewing perception this way is contentious. However, I do not take myself to settle that debate here and will leave it to the philosophers of perception to sort out. Nonetheless, I will hedge my bets on the view that seems to have the easier time explaining the harder cases (that being representationalism).

Perceptual Propositions

The view that I would like to forward is the following, propositions are properties that can be realized by types of perceptual states which are assessable for accuracy once tokened. This in turn is inherited by perceptual state types. Every token perceptual state is such that it is tokened by some mind. In this way, perceptual states are necessarily intentional in the same way that token acts of predicating/categorization are. The perception of the red cup will be constituted by representational features which allows the perceptual item to be more or less accurate. The proposition is more accurate if there is a

reddish cup-ish object that the perceiver is attending to and less accurate if the perceptual item does not correspond to the object.

Complex Propositions

If the above story is viable, then, again, this affords us simple empirical propositions. Propositions of the type: “This object is close.”, “The food is far.” and so on. These propositions are generated by perceptual states which represent objects in our environment as being a certain way to us and they are composed of thin concepts (objects and predicates) and relations (the left of relation, the bigger than relation...etc. These examples are more straightforwardly given to us, however, let us recall the kinds of propositions that are in question with regards to Hanks view. Quantified propositions will be the target set of propositions that I must, not only show can be granted on this view, but also show how they can be granted in a simpler manner; so as to easily be available to animal minds. To show this I will draw attention to some recent work in the philosophy of perception concerning perception of absences, as well as, discuss the existential view perception.

I will begin by showing how we can easily acquire negation in perception. I then will do the same with the existential quantifier. Afterwards I will show how it is only a simple translational rule to grant universally quantified propositions.

CASE 1: Negation

Something not contentious is that we perceive a wide array of objects whose property complexes change throughout time. Becky can perceive oatmeal (that p) in her bowl and as she finishes her serving, it seems rational to think that Becky can now perceive that there is no oatmeal (that no p or the absence of p). That same bowl can be empty. If an agent can recall the image of the bowl being full of oatmeal while at the

same time perceive that there is no oatmeal, then it seems reasonable to say that the agent is perceiving the bowl not containing oatmeal. I will take it that if an agent can perceive some object A with some property P at some time t and at some other time t^* where A does not have P, then the agent can perceive A **not** P at t^* . The idea that a perceiver can perceive the absence of some p has been defended by Anna Farennikova (2013). The benefit of viewing absence or something not being present as something that can be perceived is that it seems to explain the phenomenology in cases like the one given above. Where standard views suggest that someone does not see an absence, but reasons that it is not present after the fact.

Now that we have obtained the concepts of negation and conjunction from perceptual demonstratives, it will take no more than some logical equivalency rules in order for us to derive disjunction and the material conditional. I do not doubt that there may very well be methods by which we can obtain the disjunction and conditional concepts through perceptual demonstration, however I do not want to explore that matter here.

CASE 2: Existentially Quantified Propositions

If some agent perceives that some particular object A has some property P, then we should grant that they perceive that some object x has some property P. Like the conjunction cases, this is evidenced by self-reporting of perceivers. If we present three objects to some perceiver, one of which is blue, and then ask them “is there some object, among the ones presented, that is blue?” the perceiver will answer in the affirmative for the exact reason that there is a particular object that is in front of them that is blue. A different example which may drive the point home, imagine in the distance you see some vague objects. You cannot make out what they are, but you can make out that they are

green in color. From this perceptual state, an onlooker can generalize to the propositions ‘that there is something green in the distance’.

Outside these kinds of examples, it may be helpful to note that there is a view concerning “the representational content of perceptual experiences is general rather than particular, in the sense that it can be fully captured by existentially quantified statements” (Hill, 2019). Again, I will not take it upon myself to argue for an existentialist view of perceptual content. I will leave this for the philosophers of perception. However, assuming this is the case, then quantified propositional contents will fall out of my view. This would lend itself to a more straightforward and simple way (as opposed to the theories mentioned in this paper) of producing quantified propositional contents.

CASE 3: Universally Quantified Propositions

As it was the case for disjunction and the material conditional, I will lean on the translation and logical equivalency rules to secure universal operator. Given the acquisition of negation and the existential quantifier, it is only two small steps to logically derive a universal quantifier.

Traditional Functions

We will not get very far with this characterization if my view cannot account for some of the traditional functions that propositions are thought to play. I want to discuss two of these functions here.

Bearers of Truth and Falsity

It is not at all obvious how we can get truth and falsity from perceptual states. Perception is traditionally construed as being accurate or inaccurate. And in this tradition, accuracy and inaccuracy is graded. Becky’s perception of the bowl can be more or less accurate in its representation of the facts. Becky can have the visual

representation of the bowl being blue, this would mean that Becky's representation is mostly accurate save one misattributed property. Becky can have the visual representation of a badger filling the bowl instead of oatmeal which would wildly misrepresent the actual state of affairs, in this situation we would say that Becky's representation is inaccurate to a larger degree. On the other hand, truth and falsity do not seem to play by these same rules. If Becky believes that oatmeal is in her bowl, then, if the contents of her bowl is cream of rice, then her belief is false or so this is what some have been led to believe.

The problem of deriving truth and falsity from perception can be a problem for some who view perception as being pictorial. If viewed this way, perception, like a picture, can be more or less accurate in its representation of the thing it is about. However, one not needn't view perception as pictorial. In fact, perception has been argued to be propositional by the likes of Byrne. If this avenue is open to us, then truth and falsity of perception will not be a problem.

Reason Guiding

Propositions stand as the constituents of arguments. They fill the role of premises and arguments. They figure in our reasoning as beliefs and the objects of our other propositional attitudes like our desires and fears. These are also roles that perception has been thought to play. It seems awkward to say that Becky fears her perception of a spider. Her fear stems from her belief that there is a spider near her. So, can perceptual states step up to the challenge? Michael Tye (1996) has forwarded a theory of perceptual representation that includes a stipulation concerning the readiness of these representations to be used in cognitive functions, liked the ones used in constructing beliefs. The P in

Michael Tye's PANIC theory stands for Poised, where poised is a disposition for these representations to act as the inputs in the belief/desire system.

Perceptual representations play an important role in guiding our beliefs about our environment. Take for instance, the belief that you are reading this paper. It is a belief that is a product of the perception that you are visually representing words on a screen. Very little, if anything, can change your belief that you are reading this paper as you are perceiving that you are reading this paper.

Making Good on the Desiderata

Recall that the 1st desideratum is the ability for a theory of propositions to grant the propositional capacities of animals. On the account I forward, it will be sufficient that some perceiver (this will include a wide array of animal perceivers) token some perceptual state for us to attribute propositional contents to the mind in question. Moreover, the claim that perceiving something is not like anything for an animal would go against a lot of animal research and intuition. Animals would, given the limited propositional base discussed earlier, be able to carry out the relatively simple categorization, discrimination, and learning functions we observe them to have.

Accounting for the attribution of propositional attitudes to animals also becomes a simple task for this account. Animals being appropriately related to propositions in belief states can be seen to stem from their perception being propositional. If my cat perceives THAT her bowl is empty, then my cat will form the belief THAT her bowl is empty on the basis of her perception. This in turn guides her behavior appropriately (meowing at me for food).

Explaining the attribution of quantified propositions in animals is also handled quite easily given the view I offer. Recall that on Hank's view quantified propositions

result from 2nd order predication. One must predicate the property of being instantiated by every object in order to create/entertain the object in which a 2nd predication will be done.

Contrasted with the view I offer; the entertaining of some quantified proposition becomes, very simply, a matter of being in some perceptual state. If it is the case that these perceptual states have, as their contents, existential propositions, then the mere fact of being in these perceptual states will realize quantified propositions. There also doesn't seem to be any principled reason to think that animals would be cognitively or perceptually closed to being in the sort of states mentioned. If this is the case, then quantified propositions will be entailed on my view and available as propositional contents attributable to animals. Additionally, if we are allowed to hold the existential view of perception, then the mere act of perceiving grants an agent with existential propositions. This makes for a far simpler explanation for quantified propositional contents for animals if we so choose to grant it to them given future research on animal cognition.

Summary

To summarize this chapter, we motivated a Representational theory of perception by illuminating some essential features of perception that are only sufficiently captured by a representationalist theory of perception. We then discussed how propositions can be intentional in the same way that predication is for the Hanks/Soames account. From here I introduced a general positive thesis regarding the multiply realizability of propositions, then detailed a positive view of propositions that explains how propositions could arise out of perception. I show that from perceptual propositions we can avoid the worries forwarded to the current views of propositions mentioned in chapter one. Complex

propositions containing logical connectives and quantified propositions were accounted for (for the most part) by acknowledging some of the recent work done in the philosophy of perception (specifically the perception of absences and the existential view of perception). I describe how my view can tell a story concerning a couple of the traditional functions we take propositions to play. I then discuss how my theory meets the desideratum mentioned in chapter one, as well as, gives a much simpler account of quantified propositions for the possibility of the attribution of quantified propositional content to animal minds.

CHAPTER 3

Propositional Content Not Given in Perception

At this point, a perceptual avenue for propositions has been given. In its most basic form, the perceptual realization of propositions affords us empirical propositions. From here I motivated some generalizations that would expand the base of propositions we could have access to by entailment (sensitive to restriction so as to not get carried away with disjuncts). However, even with access to propositions that include logical connectives and quantifiers⁸ there is a set of propositions that seems to be categorically separated from those that are given to us in perception. Propositions concerning theoretical entities, non-existent entities, fictional entities, and other abstract objects and property relations are not so obviously derived from perception. So, how can these types of propositions be derived from the empirical propositions that are available to us?

In Chapter two I detailed the perceptual realization of propositions. This allows me to answer some of the shortcomings of the views discussed in the first chapter. However, historically, taking an empiricist view like this one gives rise to its own host of problems. For example, there are a whole host of propositions that seem to be closed off from perceptual acquisition. These include propositions of the sort: “A caused B”, “The chair is composed of subatomic particle”, and “Harry Potter is wearing glasses.” These, and similar, propositions seem to make reference to entities that are categorically different than the ones referred to in the propositions discussed in chapter two.

⁸ The problem of the set of propositions in question does not arise due to their logical complexity, in fact they still provide a problem for my position as stated in chapter 2 without having to be logically complex.

My goal is not to try to save a wholly perceptual view here since, given my more general view is a multiply realizable view, representations of non-perceivable entities can enter into thought via beliefs stemming from other mental domains. Beliefs about CAUSATION, Harry Potter, or protons sourced (possibly) from cognition will be an open route for my view. One way of explaining the presence of concepts which are not perceivable, is to allow for an innateness mechanism of concept acquisition. However, I do not take this battle to be one that I need to take a side on.

Sidestepping the acquisition debate altogether, I believe that it is enough that we observe people to have beliefs about and refer to entities that in principle are not perceivable (take for example: fictional entities like Santa Claus). Most theorists hold that the function (or at least an important function) of concepts is to represent entities in order to perform cognitive functions on them. The reported use of these concepts alone will give my view enough room to account for them in propositions, since their use is representational in nature.

Recall that the more general view I put forward is one where a proposition is a property of a representational state. If we take it that people employ concepts that we take to be non-perceivable, then the presence of beliefs that contain these concepts in their content is evidence that they are representing these entities and are in a state that would give rise to a proposition.

I would like to remind the reader of the purpose of detailing the perceptual realization of propositions in this paper. The purpose was to show how a small aspect of my more general view can answer to the criticisms I forwarded to the current theories of propositions in chapter one. A natural objection to the particular view I forward in chapter two is that it does not provide a complete explanation of how we can entertain the

vast variety of propositions we employ. This is because there is a set of propositions that makes reference to entities that cannot be sourced from perception. However, since my more general view is multiply realizable, the mere presence of a mental representation of some non-perceivable entity in thought allows for my view to explain how we may entertain propositions that contain references to these entities. This is due to my theory claiming that propositions are properties of representational states.

Conclusion

I have mounted two attacks on the current naturalized accounts of structured propositions. The first attack concerned the exclusion of the possibility that the contents of animal mental states could be propositional due to King's view relying on syntactic structure and language users to ground propositions. The second attack concerned the cognitive complexity required for quantified propositional content and what that means for the possibility that the contents of animal mental states.

After characterizing the pitfalls of the current views, I forwarded a multiply realizable view of propositions in chapter two. I also discussed how, on this view, propositions could arise from perception. Doing this allowed me the machinery to answer the objections posed to the views from chapter 1. I discussed how we could acquire logical connectives through perception which can be later used to compose more complex propositions. I also suggested, in a similar fashion, how we could grant cognizers quantified propositions. I then go on to elaborate on how my view is better fit to deal with the worries and criticisms forwarded in chapter one.

Once I detailed my positive view, I discuss some of the natural objections that arise from the perceptual realization of propositions, namely how we can acquire propositions which have as a component, referents that pick out seemingly unperceivable

objects/entities. The handling of this objection hinges on an emphasis on the more general view that I forward in chapter two. Namely, that propositions are properties of representational states. There is more work to be done in developing an explanatorily sufficient view of propositions that can take as its foundation, perception. What I aimed to do in this paper is to show that there are some routes that are available to the theorist who is empiricist friendly.

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