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The Hereby-Commit Account of Inference

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ABSTRACT

An influential way of distinguishing inferential from non-inferential processes appeals to representational states: an agent infers a conclusion from some premises only if she represents those premises as supporting that conclusion. By contrast, when some premises merely cause an agent to believe the conclusion, there is no relevant representational state. While promising, the appeal to representational states invites a regress problem, first famously articulated by Lewis Carroll. This paper develops a novel account of inference that invokes representational states without succumbing to regress. The key move is to reject the tempting idea that the relevant representational states are causally prior to inferences. I argue, instead, that an inference constitutes the relevant representational state. To infer is thus—in the very drawing of the conclusion—to represent the premises as supporting the conclusion, and thereby to commit to that support relation.

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1. Introduction

Inference is rationally distinctive. Consider Hermione, who believes the following:

- (1) Whatever Harry, a renowned gourmet, recommends is delicious.
- (2) Harry recommends burritos.

From these premises, Hermione infers this:

- (3) Burritos are delicious.

Contrast Hermione with Ron. He also believes (1) and (2), and makes a transition from those beliefs to (3). However, Ron's transition is not an inference. Perhaps considering (1) and (2) causes him to think about the newly opened burrito place, which has been running a successful advertising campaign, which in turn causes Ron to believe that burritos are delicious.

Hermione's transition can rationally justify her belief that burritos are delicious, in a way that Ron's transition from (1) and (2) to (3) cannot justify his belief. Of course, Ron's belief that burritos are delicious could be justified in other ways. Perhaps he has a strong body of inductive evidence furnished by the consumption of copious delicious burritos. But, unlike Hermione's transition from (1) and (2) to (3), Ron's corresponding transition can do nothing to bolster the rational status of his belief that

burritos are delicious. The intuitive explanation for this disparity is that Hermione's transition is an inference, whereas Ron's transition is not. His transition is a mere mulling, musing, or some other piece of mental jogging.¹ When things go well, inference is a method of rational belief formation; mere mulling is not.

What is it about inference that explains its rational distinctiveness? According to the *Standard View*, inference consists in two things.² First, the inferrer represents the premises as supporting the conclusion. Second, that representational state causes (in the right way) the agent to believe the conclusion. So, Hermione infers—whereas Ron does not—because she represents (1) and (2) as supporting (3), and only she is thereby moved to believe that burritos are delicious. According to the *Standard View*, Hermione's inferential transition is rationally distinctive because she is moved to believe the conclusion by her positive appraisal of the support that the premises provide for the conclusion. By contrast, Ron's transition is a matter of mere causation, and so cannot rationally justify his belief in the same way.

In this paper, I develop an alternative to the *Standard View*. My account succeeds where the *Standard View* stumbles: it explains the rational distinctiveness of inference while avoiding the regress problem famously articulated by Lewis Carroll [1895]. Roughly, an inference's representational state either always plays the role of a premise in a further inferential transition or does not. If so, a vicious regress ensues. If not, the challenge is to identify a non-premise role for the representational states involved in inferences. Proponents of the *Standard View* struggle to do this satisfactorily.

Some critics blame the *Standard View*'s failure to avoid regress on its commitment to inference's involving representational states [Wright 2014; Rosa 2017; McHugh and Way 2018]. They are right to reject the *Standard View*, but they misdiagnose its fundamental flaw. The deep problem with the *Standard View*, and why it ultimately flounders in the face of Carroll's regress, is not its commitment to an inferrer's representing the premises as supporting the conclusion. Rather, the *Standard View*'s undoing is its insistence that the representational state is causally prior to believing the conclusion. Jettisoning this assumption paves the way for a novel account of inference that avoids Carroll's regress, while retaining the intuitively compelling idea that the rational distinctiveness of inference lies in the inferrer's representing the premises as supporting the conclusion.

On the *Standard View*, drawing a conclusion depends on a causally prior representational state. On my alternative account, to draw a conclusion *partly is* to represent the premises as supporting that conclusion. That representational state commits the inferrer to its content. So, to infer *is*—in the very drawing of the conclusion—thereby to commit to the support that the premises provide for the conclusion.

2. The Standard View

On the *Standard View* of inference, to infer consists in representing the premises as supporting the conclusion, and in being moved to believe the conclusion by that representational state. Following Boghossian [2014], call the relevant representational state a *taking state*. The taking state registers the inferrer's positive appraisal of the

¹ I take the term 'mental jogging' from Broome [2013: 226–7].

² Proponents of the *Standard View* include Thomson [1965], Wedgwood [2006], and Boghossian [2014].

support that the premises provide for the conclusion: she *takes* the premises to support the conclusion. This appraisal moves her to believe the conclusion. Thus she infers.

It is worth underscoring the Standard View's appeal. In particular, the Standard View promises to explain the rational distinctiveness of inference—why inferring can rationally justify in a way that mental jogging cannot. The intuitive thought is that an inferrer, as opposed to a mental jogger, traces a connection of rational support between the premises and the conclusion.³ The inferrer's tracing is manifest in her taking state, which represents the premises as supporting the conclusion. And that taking state is causally relevant in the agent's coming to believe the conclusion. Thus, according to the Standard View, inferring is rationally distinctive because it is driven by a state that is itself a manifestation of rational agency—positively appraising the premises as supporting the conclusion.

There are different versions of the Standard View. But they share a commitment to two claims:

TAKING (*first pass*). A transition is an inference in part because it involves a corresponding taking state.

PRIORITY. A corresponding taking state is causally prior to an inferential transition.

TAKING captures the thought that what's rationally distinctive about inference is that it involves the inferrer's positively appraising the support that the premises provide for the conclusion. The appraisal is encoded by a representation—a taking state. **PRIORITY** captures the thought that the taking state does its work by somehow causing the agent to come to believe the conclusion. Being moved to draw a conclusion by a causally prior taking state is not sufficient for inferring; the taking state must be causally relevant *in the right way*.⁴ Standard-View theorists cash this out in different ways. What is important here is not what's different but instead what's common to all versions of the Standard View: an inferential transition partly consists in a corresponding taking state (**TAKING**), which is causally prior to the agent's believing the conclusion (**PRIORITY**).

TAKING does not entail **PRIORITY**. **TAKING** seeks to explain the rational distinctiveness of inference by appealing to a representational state; it is silent about the relative priority of an inferential transition and the corresponding representational state. Hence, one can endorse **TAKING** while denying **PRIORITY**. Such a view holds that, while inferences involve taking states, those states are not causally prior to inferential transitions.⁵ This is the view that I will defend.

Before getting to my positive proposal, however, let's improve on the first pass of the claim about taking states:

TAKING. *S*'s transition from believing $p_1 \dots p_n$ to believing that q is an inference (whereby *S* draws the conclusion that q from the premises $p_1 \dots p_n$) only if, and partly because, the transition involves *S*'s having the *corresponding taking state*: *S* takes $p_1 \dots p_n$ to support q .⁶

³ We must understand the tracing non-factively. The Standard View allows an agent to infer q from $p_1 \dots p_n$ even though the premises do not support the conclusion.

⁴ The Standard View faces a version of the infamous problem of deviant causal chains [Davidson 1973]. The account that I develop here avoids the problem, but this is an issue for another occasion [Blake-Turner manuscript].

⁵ Several other theorists have recently developed similar views [Neta 2013; Valaris 2014; Hlobil 2019; Koziolok, N. forthcoming; Marcus forthcoming]. Briefly considering these views will help bring mine into relief. But that will have to wait until after my own view is on the table. See note 24.

⁶ **TAKING** should be sharply distinguished from Boghossian's [2014: 5] 'Taking Condition'. Boghossian defends a version of the Standard View: his Taking Condition entails both **TAKING** and **PRIORITY**.

Three elaborations are in order. First, I am helping myself to the idealising assumption that an inference is always from beliefs to a new belief. Strictly speaking, this is not correct. For instance, inferences can be suppositional. Or an inference might involve abandoning a belief, instead of forming a new one [Harman 1986]. Moreover, I don't want to exclude the possibility of inferring to and from non-doxastic states, or perhaps even directly to action. But, since it simplifies the discussion considerably to focus exclusively on inferences to and from beliefs, I will idealise away from other kinds of inference.

Second, TAKING is only a necessary constraint on inference: the mere presence of a taking state is not sufficient for inferring. For example, I might take the fact that it is my friend who has been accused to support her innocence, but I conclude that she is innocent on the grounds that she has an unassailable alibi. So, the Standard View supplements TAKING by claiming that inferences involve taking states that *move* agents to draw conclusions. No matter how this movement is cashed out, all Standard-View theorists agree that a key part of the story is that taking states are causally relevant to an inferrer's believing a conclusion. Hence the commitment to PRIORITY: taking states need to be prior to inferential transitions in order to give the latter the required causal impetus.

Finally, some remarks on what a taking state is. This is a topic that deserves serious further consideration elsewhere, but the following skeletal characterisation will suffice for our purposes. As I understand it, *S*'s taking state that $p_1 \dots p_n$ support q is a *committal, obtaining representation* of *S*'s that $p_1 \dots p_n$ support q . A committal representation generates a commitment to its content. Hence, when you take some premises to support a conclusion, you are thereby committed to those premises supporting that conclusion. In light of this you are subject to rational appraisal. So, having a taking state is one way of being committed to the premises' supporting the conclusion. A taking state's being an obtaining representation means that it represents the support relation as being the case or obtaining; contrast this with the representational content of a hope.

I assume nothing further here about taking states. Thus, even if they would eschew the 'taking' terminology, any theorist who seeks to explain the rational distinctiveness of inference in terms of a relevant representation should accept this minimal characterisation of taking states.

Proponents of the Standard View endorse not only TAKING, but also PRIORITY. While this combination of commitments is integral to their efforts to explain the rational distinctiveness of inference, it opens the door to Carroll's regress.

3. Carroll's Regress

Disclaimer. Carroll's regress is notoriously hard to interpret. We needn't get bogged down here in whether my interpretation of the regress captures exactly what Carroll [1895] had in mind.⁷ The important point is the challenge the regress poses for the Standard View.

Consider this inference:

- (A) All wizards like burritos.
- (B) Severus is a wizard.

Therefore,

⁷ Several distinct regresses can be extracted from Carroll's text [Moktefi and Abeles 2016; Besson 2018].

(Z) Severus likes burritos.

According to the Standard View, an agent infers (Z) from (A) and (B) only if this involves her having a causally prior taking state. Otherwise, her premise-conclusion transition is not an inference, but is instead a mere mulling, musing, or mental jogging.⁸ The corresponding taking state has the following content:

(C) ‘All wizards like burritos’ and ‘Severus is a wizard’ support ‘Severus likes burritos.’

What role does the taking state play in the inference? Here’s a tempting initial thought: the taking state is an additional premise. The inferrer comes to believe that (Z) by inferring it from (A) and (B) together with (C).

But this cannot be right, on pain of regress. If the taking state were always another premise, we would just have another inference:

(A) All wizards like burritos.

(B) Severus is a wizard.

(C) ‘All wizards like burritos’ and ‘Severus is a wizard’ support ‘Severus likes burritos.’

Therefore,

(Z) Severus likes burritos.

But the question immediately arises once more: why is making a transition from (A), (B), and (C) to (Z) inferring, rather than mental jogging? By TAKING and PRIORITY, there must be a prior taking state for this further inference.⁹ But (C) is not the corresponding taking state of this new inference from (A), (B), and (C) to (Z). This is because (C) does not refer to itself; it is just another premise.¹⁰ So we need a *further* taking state:

(D) (A), (B), and (C) support (Z).

Now we’ve done it. All we have is yet another inference, this time from (A), (B), (C), and (D) to (Z). For similar reasons, this further inference will require its own prior taking state, which, if it is just another premise, will be part of a still-further inference that requires yet one more taking state—and so on.

Carroll’s regress shows that taking states cannot always function as premises in further inferences. Given the plausible assumption that the regress is vicious, the *Carrollian Challenge* is that of specifying some other, non-premise, role for taking states to play in inferences.

4. Three Problems for Standard-View Responses

Boghossian [2014] articulates the most developed version of the Standard View. He explains the role of taking states by appealing to rule following, an ‘unanalyzable primitive’ [ibid.: 17]. This avoids Carroll’s regress by stipulating that taking states do not play the role of premises. Instead, they play some sort of guiding role akin to a rule. Since taking states are not premises, Carroll’s regress of inferences and taking states does not get going. However, while it avoids the letter of the regress, Boghossian’s

⁸ Since inference is a piece of mentation and not a relation between abstract contents, ‘premise-conclusion transition’ is shorthand for ‘premise-beliefs-conclusion-belief transition’.

⁹ I’ll sometimes drop the ‘causally’ qualifier on ‘prior’ to avoid tedium, but it should be understood.

¹⁰ Making (C) self-referential would not fix the deep problem. Since TAKING is only a necessary and not a sufficient condition on inference, the challenge still arises of distinguishing between non-inferential premise-conclusion transitions that happen to involve taking states, and genuine inferences.

response faces three problems. As we'll see, these problems are not unique to his approach, but are obstacles to be overcome by any version of the Standard View.

First is the *Origin Problem*. The problem is to give a story about how taking states arise, a story that does not extricate us from the frying pan of Carroll's regress only to plunge us into the fire of a different regress. On pain of another regress, taking states cannot always be the products of further inferential processes. Then an inference, I_1 , would require a taking state τ_1 . But τ_1 would be the result of another inference, I_2 , which would require its own taking state τ_2 . And so on. Hence, we should avoid Carroll's regress in a way that solves the Origin Problem. Trading one vicious regress for another is not much progress.

Boghossian's rule-following view gives no inkling of whence taking states arise, and so does not solve the Origin Problem. Boghossian owes us an explanation of how taking states are produced, yet none is forthcoming. My point is not that the explanatory burden is insuperable.¹¹ My point is rather that the Origin Problem needs to be solved if Boghossian's rule-following view is to provide an adequate answer to the Carrollian Challenge. And this remains to be done.

Second is the *Explanation Problem*. Boghossian's view fails to shed much light on the nature of inference. An account of rule following needs to solve the notoriously tricky problem of discriminating between *following* a rule and merely *according with* a rule [Kripke 1982]. By helping himself to the notion of rule following as a primitive, Boghossian avoids this issue by fiat. But it doesn't illuminate the nature of inference to assimilate it to an unexplained phenomenon that is at least as mysterious.¹² In particular, explaining taking states by way of a primitive notion of rule following does little to further our understanding of inference beyond insisting that following a rule (and hence inference) is rationally distinctive in a way that according with rule (and hence mental jogging) is not.

Both the Origin Problem and the Explanation Problem generalise beyond Boghossian's rule-following view. Any account of inference that appeals to taking states will need to give a story about how they arise, a story that does not lead to another regress. Moreover, the account should appeal to notions that afford a satisfying explanation. Even setting aside these challenges, however, there is another problem with which any version of the Standard View must grapple.

The *Rational Distinctiveness Problem* stems from the structure of the Standard View itself. We've gotten into the weeds of how the Standard View might avoid Carroll's regress by specifying a non-premise role for taking states. But it's worth stepping back to remind ourselves why we ventured into the weeds in the first place. Our task is to explain why inference can yield rational beliefs in a way that mental jogging cannot. The Standard View does this by positing a causally prior taking state: positively appraising the support that the premises provide for the conclusion is part of what moves an agent to infer.

However, adding a taking state to the causal base of a premise-conclusion transition does not do much to explain that transition's rational distinctiveness. If being moved by premises in the absence of a taking state is mere mental jogging—is just being buffeted about by the causal winds—then why does adding another thing to the

¹¹ Wright [2014] argues, by way of a dilemma, that it is insuperable. I don't think that Wright's dilemma is decisive, but it is suggestive: without a clear origin for taking states, the threat of a new regress looms large.

¹² Hlobil [2014: 424–6] raises a similar complaint, in a slightly different context.

causal base turn mere mechanics into a rational process?¹³ This question is especially pressing because including a taking state in the causal base of a premise-conclusion transition is not sufficient for an agent's inferring that conclusion. Suppose that Neville believes $p_1 \dots p_n$ and that he has a taking state with the content that $p_1 \dots p_n$ support q . His beliefs and his taking state jointly cause him to believe that q , but this is not yet to say that he has inferred.¹⁴ Neville's transition might be a mere causal fluke, one that can confer no positive rational status on his belief that q .

The Rational Distinctiveness Problem raises a fundamental challenge: how can a causally prior taking state possibly secure the rational distinctiveness of inference? The challenge is sharpened by the fact that all parties agree that causally prior taking states are not sufficient for inference. So, if a causally prior taking state sometimes results in mere mechanics, what's special about those transitions in which it gives rise to inference?

It's worth emphasising that the difficulty here is due to the structure of the Standard View itself. In explaining the rational distinctiveness of inference, we are trying to capture the idea that an inferrer, in drawing a conclusion, undertakes a rational process rather than being brutally moved by the premises. If we're in the grip of the Standard View, we might think that the *only* way to explain the rational distinctiveness of inference is to add something that conspires with the premises to cause the inferrer to believe the conclusion. But this invites the challenge posed just now, of how adding anything to the causal base of a premise-conclusion transition can transform it from a churning of the causal order into ratiocination.

To sum up, the Standard View faces three obstacles in trying to avoid Carroll's regress—the Origin Problem, the Explanation Problem, and the Rational Distinctiveness Problem.¹⁵ I do not claim that these obstacles tell decisively against the Standard View. But they are serious enough impediments to motivate an alternative approach to inference.

5. An Alternative to the Standard View: Taking without Priority

Recall the Standard View's two core commitments:

TAKING. A transition is an inference in part because it involves a corresponding taking state.¹⁶

PRIORITY. A corresponding taking state is causally prior to an inferential transition.

Given the Standard View's struggle to avoid Carroll's regress, several theorists have recently rejected it [Wright 2014; Rosa 2017; McHugh and Way 2018].¹⁷ They blame the Standard View's failure on TAKING, and so seek to give accounts of inference that do not require an inferrer's representing the premises as supporting the conclusion. I doubt that the rational distinctiveness of inference can be adequately explained without appealing to taking states. Some of these theorists are motivated

¹³ Korsgaard explores a general version of this question in much of her work (e.g. [2009]).

¹⁴ A Standard-View theorist might construe the causal relevance of an inference's corresponding taking state in a variety of ways. A taking state's jointly (along with the premises) causing the conclusion-belief is just one of these ways, which it is useful to focus on for expository purposes.

¹⁵ For similar concerns to the Explanation Problem and Rational Distinctiveness Problem, see Marcus [2012] and Neta [2019].

¹⁶ I use the first-pass version of TAKING for readability, but the official construal is in section 2.

¹⁷ In addition to regress worries, some argue that the Standard View over-intellectualises inference [McHugh and Way 2016; Siegel 2017].

nonetheless to try, because they explicitly take the Carrollian Challenge to tell decisively against the Standard View, and they implicitly assume that the only way to reject the Standard View is to abandon TAKING [Wright 2014: 32–3; Rosa 2017: sec. 6].

But there is another way to reject the Standard View. I propose to explain the rational distinctiveness of inference by appealing to taking states, but without insisting that those taking states are causally prior to inferential transitions. In accepting TAKING while denying PRIORITY, such an account promises to illuminate the rational distinctiveness of inference without succumbing to Carroll's regress.

Roughly, the account is this. An inference is a causal premise-conclusion transition that constitutes its corresponding taking state. Recall that taking states are committal. So, when an agent infers that q from $p_1 \dots p_n$, she thereby commits to $p_1 \dots p_n$'s supporting q . On the Standard View, drawing a conclusion involves already taking the premises to support the conclusion. On my view, by contrast, to draw a conclusion is *partly* to take the premises to support the conclusion.

I'll unpack the account in three steps. First, in section 5.1, I'll operate at a high level of abstraction and lay out the broad explanatory structure of my view. Second, in section 5.2, I'll complete my account by identifying a distinctive functional role for inference. That role is akin to the inferrer's thinking 'I hereby commit to the premises' supporting the conclusion.' Finally, in section 5.3, I'll explain how my account avoids Carroll's regress without falling foul of the problems that plague the Standard View.

5.1 Jettisoning the Priority Claim

What might a TAKING-without-PRIORITY account of inference look like? I hold that an inference is a causal premise-conclusion transition that *constitutes* the inferrer's having the corresponding taking state. Hence, taking states play a role in explaining inferential transitions, but not by moving agents to believe conclusions. Rather, the inferential nature of the transition is characterised in part by something that the transition constitutes just in case it is inferential—a corresponding taking state.¹⁸

It's worth dwelling on this explanatory structure. I characterise the nature of the explanandum (an inferential transition) by appealing to something that the explanandum constitutes (a taking state). Such an account illuminates the nature of the target phenomenon by way of an asymmetrical dependence relation—constitution.¹⁹ My appeal to constitution is somewhat unusual, in that the direction of explanatory priority comes apart from the direction of metaphysical priority. I characterise the nature of the explanandum in terms of something that it constitutes, rather than something by which it is constituted. So, taking states are at once *explanatorily prior* to inferential transitions (taking states characterise certain transitions as inferential) and *metaphysically posterior* to them (taking states are constituted by inferential transitions).

¹⁸ One might wonder how a transition can constitute a state. I construe inference as a causal process from (considering) premises to drawing a conclusion. Drawing a conclusion is an action, and actions can constitute states. (Some readers may prefer to construe an action as constituting the *onset* of a state. Nothing here turns on this.) Under the right conditions, the action *your breaking the vase* constitutes the state *your being in deep trouble*. Similarly, an inference is a process-terminating-in-an-action that constitutes a taking state. The whole process, rather than just believing the conclusion, constitutes the state in order to keep the connection between premises and conclusion tight enough to preclude deviant causal chains [Blake-Turner manuscript].

¹⁹ For more on constitution and similar notions, see Wilson [2014].

Two analogies will help to illuminate my explanatory strategy. First, consider the question of what it is to be a goalscoring kick in soccer.²⁰ Many kicks are not goalscoring kicks—passes, shots off target, and so on. What distinguishes goalscoring kicks from other kinds of kicks? In order to answer that question, we can appeal to two things: (i) a causal process—from kicking the ball to the ball’s ending up somewhere; and (ii) something constituted by the process—scoring a goal. Although there cannot be a goalscoring kick without the scoring of a goal, they are not identical. There are other ways of scoring a goal. For instance, one might score from a header.

We can similarly distinguish genuine inferences from non-inferential premise-conclusion transitions. We can do so by appealing to two things: (I) a causal process—from premise-beliefs to coming to believe a conclusion; and (II) something constituted by the process—a corresponding taking state. Although there cannot be an inference without a corresponding taking state, they are not identical. There are other ways of taking some premises to support a conclusion. For instance, one might judge, without inferring, that the premises support the conclusion.²¹

This kind of explanation only seems to go so far, however. To give a more satisfying characterisation of an explanandum’s nature by appealing to something that it constitutes, we must say something about the conditions under which the constitution occurs. For instance, when does a kick constitute scoring a goal? Only when enough of the ball crosses the opposing team’s goal line; only when the kicker’s team doesn’t commit a foul; and so on. It seems that we could in principle specify necessary and sufficient conditions under which a kick constitutes the scoring of a goal, and thereby fill out our explanation of what goalscoring kicks are. Do we similarly need to fill out our explanation of what inference is?

I agree that more needs to be said about when premise-conclusion transitions constitute taking states, and so when they are inferential. But I resist the idea that we can give an illuminating account of inference only by specifying informative, independent, necessary and sufficient conditions for the constitution of taking states. That’s the where the second analogy comes in. Compare what it is to promise. Promising is a causal process that ends with the agent’s doing something, such as uttering the sentence ‘I promise to deliver the message.’ But not every utterance of ‘I promise to deliver the message’ amounts to promising; one might utter the words as part of a play. So, what distinguishes the utterances of ‘I promise to deliver the message’ that count as promising from those that do not?

Roughly, an agent’s uttering ‘I promise to deliver the message’ amounts to promising just in case, and because, it constitutes the agent’s being in a corresponding state—being obligated to deliver the message. As in the case of soccer, we should say something about when the utterance constitutes the obligation. But, unlike in the case of soccer, I’m sceptical that we can give informative, independent, necessary and sufficient conditions under which an utterance constitutes an obligation. We could give conditions such as these: the utterance is a promise only when it is not given under duress; only when the utterer is not a participant in a play; and so on. But I doubt that these conditions will be at once independent of promising, and necessary

²⁰ The notion of a goalscoring kick is not useful enough to soccer fans to be something of which anyone keeps track. But it is worth sacrificing soccer usefulness on the altar of clarity in our pursuit of an account of inference.

²¹ One crucial disanalogy between soccer and inference is that whether or not a kick is goalscoring doesn’t seem to have much to do with the intrinsic nature of the kick. By contrast, whether a premise-conclusion transition is inferential is intrinsic to the transition. See section 5.2.

and sufficient. That does not render the account of promising useless, however. We can still gain significant insight into the nature of promising by holding that it is a causal process that constitutes an obligation under some kinds of conditions and not others, even if we have no informative, independent, necessary and sufficient criteria.

I am not sure whether an inference is more like a goalscoring kick or a promise in this respect. I won't try to settle the issue here. But that doesn't preclude us from giving an illuminating account of inference by appealing to something that a premise-conclusion constitutes just in case it is inferential—a corresponding taking state. For this account to be illuminating, I'll need to say more about the conditions under which a premise-conclusion transition constitutes a corresponding taking state, and I'll do so shortly. However, the bar is set too high by insisting that informative, independent, necessary and sufficient conditions must be given before an account can do explanatory work.

The overall explanatory structure of my account is very different from the Standard View's. For Standard-View theorists, a corresponding taking state causally explains why the inferrer comes to believe the conclusion. The taking state does this by moving the inferrer to draw the conclusion. By contrast, I deny that corresponding taking states causally explain why inferers come to believe conclusions. The premise-beliefs alone cause an inferrer to believe a conclusion; the corresponding taking state characterises the premise-conclusion transition as inferential, rather than not. It explains why the inferrer *draws a conclusion*, instead of merely mulling her way into believing something that her premise-beliefs might happen to support.

That, then, is how one can endorse TAKING without PRIORITY. Inferences are partly explained by corresponding taking states, but those states are not causally prior to inferential transitions, as the Standard View would have it. On my view, a corresponding taking state does not cause an inferrer to believe a conclusion. A corresponding taking state is instead constituted by all and only those premise-conclusion transitions that are inferential.

When does a premise-conclusion transition constitute a taking state? It does so, just in case the transition plays a distinctive functional role. Let me explain.

5.2 The Hereby-Commit Account of Inference

Recall the promise analogy. There are several ways in which you might promise to deliver the message. You might, as we've seen, utter 'I promise to deliver the message.' Or you might give a solemn nod when asked whether you promise to deliver the message. Your uttering and your nodding play the same functional role. In the very uttering of the words or the nodding of your head, you thereby commit to delivering the message. It's as if you thought 'I hereby commit to delivering the message', although no such thought—explicit or otherwise—need accompany your utterance or your nod. Rather, the sentence picks out the role that the very uttering or nodding itself plays.

Just as a nod can play the functional role of committing an agent through her nodding, so too can a premise-conclusion transition play the functional role of committing an agent through her making the transition. The notion of commitment has been underexplored, but we can leave it intuitive here. When you are committed to something, you are 'on the hook' for it. You are subject to distinctive kinds of rational evaluation in virtue of that commitment [Smith 2005; Neta 2019]. If you believe that all

swans are white, you are committed to its being true that all swans are white. In virtue of that, you are open to criticism for failing to give up your belief when confronted with a black swan.

I maintain that a premise-conclusion transition constitutes a corresponding taking state, and so is inferential, when and only when the transition plays the *hereby-commit* functional role.²² It's as if the inferer thinks 'I hereby commit to the premises' supporting the conclusion'. But, just as one can commit to delivering a message simply by nodding, the inferer needn't make any utterances or have any thoughts about commitment. Rather, the premise-conclusion transition *itself* plays the hereby-commit functional role and constitutes a corresponding taking state. In the very drawing of the conclusion, the inferer takes a rational stand and thereby commits to the premises' supporting the conclusion.²³

On this account, inference is special in a way that mulling is not, because inferring involves committing—in the very drawing of the conclusion—to the premises' supporting the conclusion. That commitment makes an inferer subject to distinctive kinds of rational evaluation, to which she is not subject when she merely mulls. Even though I might agree with you that pancakes are delectable, I can reasonably criticise your drawing that conclusion from 'Hagrid likes them' on the ground that the premise doesn't support the conclusion (perhaps Hagrid has bad taste). And, in virtue of representing it as being the case that 'Hagrid likes them' supports 'Pancakes are delectable', you are committed to the premise's supporting the conclusion.

So, to draw a conclusion is to commit, in the very transition from premises to conclusion, to the premises' supporting the conclusion. This commitment is generated by the corresponding taking state that the transition constitutes—if and only if it is inferential. An inferential transition from $p_1 \dots p_n$ to q thus fulfils the hereby-commit functional role. The transition functions as the inferer's thinking 'I hereby commit to $p_1 \dots p_n$'s supporting q .' That is not to say that the inferer need have a thought with anything like that form, consciously or otherwise. Rather, drawing a conclusion, as opposed to merely making a transition to a conclusion-belief, thereby commits the inferer to the contents of the premise-beliefs supporting the content of the conclusion-belief. The hereby-commit functional role is thus fulfilled by the agent's throwing her rational weight behind the support that the premises provide for the conclusion. This is similar to how, when and only when uttering 'I promise to deliver the message' is promising, the uttering functions to change normative reality by committing the agent to delivering the message [Austin 1962].

Putting all of that together yields the following account:

HEREBY-COMMIT ACCOUNT. An inference is a mental transition of S 's that consists in (i) S 's believing $p_1 \dots p_n$ —the premises, (ii) which causes S to believe that q —the conclusion; (iii) that causal transition constitutes S 's having the corresponding taking state—taking $p_1 \dots p_n$ to support q —thereby committing S to the premises' supporting the conclusion; (iv) the transition from premises to conclusion plays the hereby-commit functional role, which is expressible by, but not reducible to, S 's thinking, 'I hereby commit to $p_1 \dots p_n$'s supporting q .'²⁴

²² I construe functional roles liberally, so that even transitions can have functional roles by having certain inputs or outputs: for inferential transitions, the output is of constituting a commitment to the premises' supporting the conclusion. But, if one prefers, one can think of drawing the conclusion itself as playing the functional role, rather than the whole premise-conclusion transition as doing so.

²³ As I construe it, whether a premise-conclusion transition plays the hereby-commit functional role is due to the intrinsic nature of that transition. This is importantly different from whether a kick is a goalscoring one.

5.3 Avoiding Carroll's Regress

Carroll's regress shows that taking states cannot always be premises in further inferences. The Carrollian Challenge, then, is to specify a non-premise role for them to play. The HEREBY-COMMIT ACCOUNT meets this challenge. An inference's corresponding taking state is not a premise. Rather, it is constituted by the causal transition from premise-beliefs to conclusion-belief. The taking state thus characterises the transition as an inference, rather than as mere mental jogging. Because an inferential transition constitutes its own corresponding taking state, the regress of taking states and inferences never gets off the ground.

This solves the Origin Problem, the burden of which is to explain whence taking states arise. On pain of another regress, taking states cannot always result from further inferential processes. But then from where do they come? We shouldn't leave the origins of taking states unsatisfactorily brute. On my view, there is no mystery about the origin of an inference's corresponding taking state: it is constituted by the premise-conclusion transition. Since the taking state is not the result of a further inference, we avoid Carroll's regress without generating another.

The HEREBY-COMMIT ACCOUNT also solves the Explanation Problem. The problem is to specify a non-premise role for taking states that makes explanatory progress. Boghossian's rule-following approach runs into this problem. Since rule following is very similar to inferring, taking rule following as a primitive doesn't shed much light on inference. By contrast, I avoid Carroll's regress by appealing to notions that are further removed from inference—causation, constitution, and the hereby-commit functional role. Because of this, my account better illuminates the nature of inference.²⁵

The final problem of which we must be wary in steering clear of Carroll's regress is the Rational Distinctiveness Problem. In section 4, I argued that the Standard View suffers from a deep structural defect. It tries to explain the rational distinctiveness of inference by adding a taking state to the causal base of believing a conclusion. But then Standard-View theorists must explain what is special about being caused by *taking states* that leads to rational distinctiveness, when being caused by one's premise-beliefs alone is mere mechanics. This explanatory burden is especially heavy, given that one can merely mentally jog even when a taking state is causally relevant to so jogging.

²⁴ It's worth outlining how my account differs from other recent attempts to reject the Standard View without abandoning TAKING. Neta [2013, 2019] is neutral on whether taking states are efficient causes of drawing conclusions, whereas I deny PRIORITY. Moreover, the contents of Neta's taking states are very sophisticated. They are self-representing, and depict relations of *ex post* justification. These complicated representations are grist to the mill of those who complain that TAKING over-intellectualises inference. My account relies on much simpler taking states, which committally represent the premises as supporting the conclusion. Valaris [2014] and Marcus [forthcoming] argue that taking states constitute, rather than cause, inferences. On my view, by contrast, taking states are constituted by inferential transitions. This allows my account to avoid problems that Valaris and Marcus have with generalising their accounts beyond deduction. Koziolok, N. forthcoming disjunctive, knowledge-first, account has taking states (rationally) caused by inferential transitions, whereas on my view taking states are constituted by such transitions. My account has two main advantages over Koziolok's: mine is unified, rather than disjunctive; and it avoids having to take knowledge as primitive. Finally, Hlobil [2019] rejects TAKING, arguing that takings are not states at all. Rather, he holds, to take some premises to support a conclusion is to attach 'inferential force' to the argument from those premises to that conclusion. There are advantages to construing takings representationally, however, and Hlobil's case against doing so is not decisive. Moreover, despite his best efforts, the notion of attaching inferential force remains somewhat obscure.

²⁵ This point stands even if, ultimately, we cannot spell out what it is for a transition to play the hereby-commit functional role in terms completely independent of inference. Of course, it's open to Boghossian to elucidate the notion of rule following while leaving it unanalysed, but that needs to be done.

The problem, I suggest, lies with the Standard View's misguided allegiance to PRIORITY. This all-but-forces Standard-View theorists to tackle the Rational Distinctiveness Problem aetiologically: the rational distinctiveness of drawing a conclusion supposedly lies in how the conclusion-belief is brought about. But this invites the worry that drawing a conclusion is *not* rationally distinctive; it is just a process of being buffeted about by especially complicated prior causes.

In rejecting PRIORITY, my HEREBY-COMMIT ACCOUNT offers a solution to the Rational Distinctiveness Problem that does not depend on aetiology. Instead of trying to identify the rational distinctiveness of inference in the causes of conclusion-beliefs, I locate the distinctiveness of inference in the way that conclusions are drawn.²⁶ In particular, since an inferential transition plays the hereby-commit functional role, to draw a conclusion is to take a rational stand. It is to commit—in the very inferring—to the premises' supporting the conclusion. Because the commitment-generating taking state is constituted by, rather than existing prior to, the inferential transition, the taking state is not just another causal lever. The taking state instead reflects the agent's having made up her mind—in the very inferring—about whether the premises support the conclusion. Borrowing some useful terminology from Hieronymi [2014], to draw the conclusion that q from $p_1 \dots p_n$ involves *settling the question* of whether $p_1 \dots p_n$ support q . That opens you up to rational criticism because it reveals 'the quality of your will' [ibid.: 15]. Drawing a conclusion is thus rationally distinctive not because of its causal history, regardless of whether or not that includes a taking state. Rather, an inferential transition is distinctive because it constitutes the agent's endorsing the premises' support for the conclusion. Hence, in the very act of drawing a conclusion, an inferrer puts her rational seal of approval on the relevant support relation.

The HEREBY-COMMIT ACCOUNT thus delivers what the Standard View merely promised—an explanation of the rational distinctiveness of inference that gives Carroll's regress an adequately wide berth. On the Standard View, drawing a conclusion involves being already committed to (or otherwise representing) the support relation between premises and conclusion. The problem is that one's commitments can cause one merely to mentally jog to a conclusion-belief, and so it is difficult to distinguish mental jogging from genuine inference. On my HEREBY-COMMIT ACCOUNT, to draw a conclusion in part *is* to commit to the relevant support relation: an inferential transition functions as the inferrer's thinking 'I hereby commit to the premises' supporting the conclusion.' So, an inferrer, unlike a mental jogger, exercises her rational powers in making a transition from premises to conclusion, because she thereby commits to the relevant support relation.

6. An Objection and a Reply

Before I conclude, let me deal with an objection. Sometimes agents infer by explicitly relying on a prior taking state. If giving up PRIORITY requires denying what is obvious by introspection, the objection goes, I can't have explained the rational distinctiveness of inference, after all.

I accept the intuition: some inferences do involve prior taking states.²⁷ But this poses no threat to my view. Let's distinguish a *generic* taking state from the *corresponding*

²⁶ Neta [2013, 2019], Hlobil [2019], and Koziol, N. *forthcoming* pursue similar strategies.

taking state of an inference. A generic taking state is any committal, obtaining representation with the content that some premises support some conclusion. The corresponding taking state of an inference from $p_1 \dots p_n$ to q is the particular taking state that has the content that $p_1 \dots p_n$ support q . TAKING is the claim that inferences are partly explained by corresponding taking states. On my HEREBY-COMMIT ACCOUNT, that consists in the premise-conclusion transition constituting the corresponding taking state.

All of this is compatible with some inferences also involving prior, *generic* taking states as premises. It is these cases that explain the datum of an inferer's sometimes relying on a prior taking state. Consider this inference:

- (4) p_1
- (4.1) p_2
- ⋮
- (5) p_n
- (6) $p_1 \dots p_n$ support q
- Therefore,
- (7) q

The inferer positively appraises the support that $p_1 \dots p_n$ provide for q , and then uses that as a further premise from which to draw the conclusion that q .

But (6) is not the *corresponding* taking state of the inference. That way regress lies. (6) is merely a generic taking state and does not explain why the transition is genuinely inferential. What makes the transition from the premises to (7) inferential is that it constitutes a corresponding taking state, which represents it as being the case that (4)–(6) support (7).

In this way, I account for the datum. Sometimes inferers rely on prior taking states when drawing conclusions. But, when this happens, the prior taking state is a generic taking state that functions as another premise, not the corresponding taking state of the inference. The inferer still needs to take a rational stand and to commit to all of the premises' supporting the conclusion; she does so by drawing the conclusion.

7. Conclusion

Why is inference rationally distinctive? The Standard View answers by appealing to taking states that are causally prior to drawing conclusions. The commitment to both TAKING and PRIORITY means that the Standard View struggles to meet the Carrollian Challenge to identify a non-premise role for taking states. Moreover, I argued that the structure of the Standard View impedes its ability to explain the rational distinctiveness of inference. It is far from clear that adding a taking state to the causal base of believing a conclusion can turn mere mechanics into ratiocination. This Rational Distinctiveness Problem is especially pressing, since even joint causation by premises and a corresponding taking state does not suffice for inference.

The way to avoid these difficulties is not to give up on the idea that inference involves representing the premises as supporting the conclusion. Rather, it is to accept TAKING while jettisoning PRIORITY. Doing so allows for a new account of inference that explains its rational distinctiveness while avoiding Carroll's regress. On my

²⁷ We should not overstate the force of the intuition, however. Compare action. While some intentional actions involve prior intentions, others involve only intentions-in-action: the agent's intention is manifest through her acting, rather being prior to it [Anscombe 1963]. Similarly, it's intuitively better to construe some inferences as involving only what we might call takings-in-action: the agent's taking is manifest through her drawing the conclusion.

HEREBY-COMMIT ACCOUNT, an inference constitutes the inferer's taking the premises to support the conclusion. Since this taking state is not prior to the inferential transition, Carroll's regress never gets going. Moreover, in virtue of having the corresponding taking state, the inferer is committed to a support relation between premises and conclusion. Inference is thus rationally distinctive because inferring (as opposed to merely coming to have a conclusion-belief) has a distinctive functional role. An inferential transition functions as the inferer's thinking 'I hereby commit to the premises' supporting the conclusion.'

Hence, the rational distinctiveness of inference does not require a *prior* commitment to the premises' supporting the conclusion, as the Standard View claims. Rather, inference is rationally distinctive because, in the very drawing of the conclusion, one thereby commits to the relevant support relation.²⁸

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