Dear editors and reviewers,

Thanks for the detailed comments on this paper. I’ve submitted the revised version, and I wanted to briefly go over what changes were made in response to the comments. In what follows, the referee comments are in black, and my replies are in red.

COMMENTS FOR THE AUTHOR:  
  
Reviewer #1: This is a clever and interesting paper presenting a novel problem for the Uniqueness thesis, which is (roughly) the claim that for any given body of evidence, there is at most one doxastic state that it's rational to be in. The central argument is that Uniqueness is incompatible with a set of relatively standard and plausible assumptions (e.g., about self-knowledge and common knowledge of rationality) in games with no symmetric equilibrium. It seems that the two players must come to different doxastic attitudes (corresponding to one of the asymmetric equilibria), despite possessing exactly the same evidence. This is in tension with Uniqueness, given those standard assumptions.   
  
I think that the paper is promising and stands to make an important contribution to the debate over Uniqueness and Permissivism. I do think there's one objection (or wrinkle) that should be discussed prior to publication, however.   
  
If we do everything in terms of de dicto propositions, it's not clear that games with only asymmetric equilibria pose a problem for Uniqueness. Take the first model of the Xefteris game (the first four bullet points on p. 7). Here, A plays 0.6 while B and C each play 0.4, with each player having a correct belief about what other players will play.   
  
In this case, can't we have it that all players have the same credences in all de dicto propositions? A, B, and C would each be certain that A will play 0.6 while B and C will each play 0.4. No violation of Uniqueness so far.   
  
Perhaps the issue only arises when we talk about de se propositions (or self-ascription of properties) as well. A self-ascribes the property of playing 0.6, while B and C do not self-ascribe this property, but instead self-ascribe the property of playing 0.4. This is puzzling, but it's no counterexample to Uniqueness, unless we assume that Uniqueness must apply to de se propositions (or property self-ascriptions) as well.   
  
So would it be fair to say that games with only asymmetric equilibria show that Uniqueness cannot hold for all propositions, including de se ones, but do not scuttle a version of Uniqueness which is restricted to de dicto propositions? If so, then might the Uniqueness theorist just retreat to that latter, weaker view? Or is this move ill-motivated and ad hoc? Or could it be grounded in skepticism about the notion of de se propositions, understood as irreducible to de dicto ones?

This is a fairly deep and tricky point, and while I’ve addressed it in the revised version, I’m not sure I’ve gotten to the bottom of it. The thing is, it’s very hard to say what it is for the players to share all their evidence if we do everything using de dicto propositions. If we assume (as is standard, if not unproblematic, in formal models) that people know their own evidence, it gets very hard to have people not know their own identity. And that suggests that they don’t really have the exact same evidence after all.

I think the best thing to do here is to do as much as possible in terms of de se propositions, so all the evidence is de se, and hence sharable even for people with some amount of self-awareness.

In the main argument, I do have them disagreeing over a de dicto proposition, namely what credences are rational for any person with this evidence playing this game to have about the other players in the game. So we do get a violation of Uniqueness vis a vis a de dicto proposition. But really I think it’s best to stick to the de se.

This isn’t really a point that tells in favor of either Uniqueness or Permissiveness. It raises a worry about a presupposition of the whole debate, namely that it makes sense to talk about people who share all the evidence. In practice what we normally say is that they share the relevant evidence, but this is a bit of a fudge; after all it’s not like the notion of evidential relevance is entirely clear.

I’m grateful to have the chance to get this a bit clearer in the paper, although I really don’t think I got to the bottom of it.

Minor comments:   
In a few places, "Permissivism"/"Permissivist" are misspelled with only one "s".   
  
In a few places, "equilibria" is used as the singular; it should be "equilibrium." 

Thanks for spotting both of these. Hopefully fixed now.

On p. 2, the closing two sentences of the penultimate paragraph are somewhat confusing. It seems like it may just be a matter of wording and punctuation. The third-to-last sentence says that on the weakest version of Uniqueness, once a situation is described in full detail, there's precisely one rational doxastic attitude. But then the second-to-last sentence begins, "Everyone holds that, since the normative supervenes on the descriptive, that…" The start, "Everyone holds that" sounds like the author is claiming that everyone endorses the weak Uniqueness thesis states in the previous sentence (with "that" being a propositional anaphor). I take it that's not what's intended. Instead, the author is intending to say that everything thinks that the supervenience of the normative on the descriptive entails that describing a situation in full descriptive detail fixes which doxastic states are rational. But for this reading, the author should delete the comma after "Everyone holds that" (it's a common comma error for people to have a comma after a "that" when it's followed by a clause beginning "because", or "since", or "if", or "when." Not sure how to state the rule exactly, but there shouldn't be a comma in such cases.) And the author should also delete the second "that". 

Yes that was confusing. I’ve rephrased it.

On p. 6, "game" is missing after the phrase "symmetric three-player zero sum" (4th line of page). 

Fixed – thanks again.  
  
  
Reviewer #2: The paper argues that certain types of games in decision theory, if played under conditions of self-knowledge and common knowledge of rationality, lend support for a strong version of epistemic permissivism.  
  
The paper is well structured. The relevant literature is cited. The paper doesn't really engage with the broader literature on permissivism, but that can be fixed without too much effort.  
  
One bigger worry I have is that the argument goes through really quickly. I think the author should take more time explaining the strategy, why the various steps of the argument are correct, and so forth. I have read sections 2 and 3 five times now and I'm still not 100% certain what the argument is (of course, maybe the reason why I still don't fully get the argument is that I am ignorant. But since there are a lot of ignorant people out there, I think there would be value in presenting the steps of the argument more carefully). Claims like "The reason is that a version of the proof of the previous section still goes through" with no presentation of the revised proof are too quick. Claims like "Mark Fey (2012) showed that there are symmetric positive-sum two-player games that have only asymmetric equilibria" with no explanation of Fey's argument (not even one or two sentences) are also too quick. The paper is super short. It could easily be a couple of pages longer.

I agree; it was a bit too quick. I’ve made some small changes to section 2 to hopefully help a bit with that, and rephrased section 3 rather dramatically. In section 2, I didn’t do enough to make clear which steps were relying on earlier steps in the 14 step argument, and it wasn’t at all obvious just from the text. But the bigger changes are in section 3. I’ve set out the main argument in premise-conclusion form at the start. The advantage of this isn’t that premise-conclusion form is particularly clear; it might help a bit here, but it doesn’t do a lot on its own. Rather, it lets me do three things.

First, it makes clear what other assumptions I’m relying on. In particular, it makes more explicit how and where I’m relying on the assumption that the players are rational, utility maximisers, and have common evidence, and all these things are common knowledge.

Second, by numbering the premises, it’s clearer when I refer back to the assumptions just what I’m referring to.

Third, it makes it a bit clearer what assumptions I’m making about game playing in general, and what assumptions I’m making about this particular game. I don’t think that was very clear in the original draft, and hopefully it’s a little clearer now. The big argument is that if Uniqueness is true (and is known to be true by the players), then any symmetric game played under common knowledge of rationality and common evidence will end up at a symmetric equilibrium. And then the mathematical result that this game does not have a symmetric equilibrium implies that this game cannot be played under common knowledge of rationality and common evidence. Since intuitively the game can be played under those conditions – there look like there are good models of the game being played – Uniqueness says that something actually possible is impossible, so it is false.

My main worry is that, while the paper's main idea is interesting, I don't think it is interesting enough to warrant publication in a journal like Erkenntnis.   
  
First, the argument is limited to an accuracy-centered framework. Also, the argument assumes restrictive conditions of full transparency and self-knowledge. As @ says on page 2, "we'll assume that the following things are common knowledge among players of the game. Each player is rational, so they form rational credences, and maximise expected utility". This isn't to say that the counterexample is ill-founded, of course. But these assumptions limit the scope of the argument.

Second, the argument focuses on decision-theoretic cases that can pretty much be analyzed a priori. But this isn't the sort of cases that are central to the debate on uniqueness. Here is the sort of cases that most people working on uniqueness are interested in. Suppose that there are two teams of scientists: A and B. They are both working on the same problem and they have gathered a lot of empirical evidence on that problem. Team A thinks that H and team B denies that H. If they are both rational, does this mean that they do not have the same evidence? Can they have the same evidence and both be rational? These are the sort of cases that are central to the debate. Again to be clear: this isn't to say that the counterexample is ill-founded. But I wonder what sort of difference these cases will make for other philosophers working on uniqueness and permissivism.

I agree this is not like the standard cases discussed in the Uniqueness literature. I think this is a strength, not a weakness though. Here’s why.

I think it’s very intuitive that in everyday, messy, cases, rational people can have different opinions about a question. Not everyone has that intuition, and as a raw intuition it might be not much of an argument, but I totally share the intuition.

Now it’s true that the most I’ve shown here is that in idealized cases, with no mess, people can have different opinions based on the same evidence. That doesn’t quite prove the thing we’re most interested in, about whether Uniqueness is true in real life messy situations. But it seems just incredible that adding in mess should force people’s opinions back into conformity, even though they were different in the ideal case. I can’t even imagine how that could work.

There is an important asymmetry in the dialectic here. If someone had an argument that perfectly rational, idealized, agents always obeyed Uniqueness, I think it would be very plausible that Permissiveness could be true in real life situations, because it could be permissible to have differing reactions to the ‘mess’ that gets added when moving from ideal to real situations. But if we can have rational disagreements even in the ideal case, then it seems incredibly likely that we can have them in messy situations too.

I haven’t really proved this, but my feeling is that I’m trying to take on the case that’s most hospitable to Uniqueness, and showing that it doesn’t even work there. If that’s right, Uniqueness doesn’t work anywhere.

One other trivial point. I don’t really intend this to be an ‘accuracy’ framework. I am assuming that people are coherent, that they respond correctly to their evidence, and that they maximise utility. I don’t assume anything in particular about accuracy though. But it definitely is a very idealized framework.

Other comments:  
  
- On pages 1 and 2, @ describes weaker and stronger varieties of Permissivism and Uniqueness. I find some of these remarks confusing, because some of the "varieties" @ mentions are unheard of in print. For instance, in the literature on Uniqueness, no one argues that "there is only one doxastic attitude that is rationally permissible (Presumably it is the view that is certain of all and only truths.)". The remarks suggest that there are many different varieties of uniqueness and permissivism discussed in print. But except perhaps the clash between intrapersonal and interpersonal permissivism, the debate has been pretty constant. At least, everyone in these debate assume that the epistemic rationality of an attitude is relative to a body of evidence.

I rewrote this. I was trying to be a bit too cute about having the theory apply even to versions of Uniqueness and Permissivism that people haven’t invented yet, and I think it just made things confusing. So I rewrote the intro to make the paper make more in line with the existing literature.

- Page 4, line 10 in the formal argument: @ says that "Since Row knows Column's credence that Row will Swerve (whatever it is), and Row knows Column is rational, but Row does not know what Column will do, it must be that Column is indifferent between Stay and Swerve given her credences about what Row will do.". Call this the "Indifference" step in the argument. This is a central step. It's unclear to me why we should accept step 10. Perhaps Row does not know what Column will do, but I don't see why this suggests that Column is indifferent between Stay and Swerve. Perhaps Row fails to know what Column will do because a credence of 0.99 in x fails to constitute knowledge. And if Row and Column play this game over time, Row will surely realize that Column swerves 99% of the time (the author makes a similar claim on p. 5).

Yes, if they play the game repeatedly that’s surely true. I’ve rewritten this to make it clear it’s meant to be a one-shot game.

Line 10 was just meant to be a simple consequence of what I’d already derived. But (a) I hadn’t made clear where I’d derived it (line 6 it turned out), and (b) I’d changed terminology from talking about knowledge to talking about inference. I’d intended ‘infers’ to mean ‘comes to know’, but that was sloppy. I’ve rewritten to make it clear it’s about knowledge, and to make clearer which parts of the argument come from which earlier parts.

- @'s interpretation of deference principles is implausible. @ says this:  
  
"Imagine that A forms a belief (we'll come back to how) that B believes that a rational thing to do in the Xefteris game is to play 0.6, and so she will play 0.6"  
  
This is an implausible application deference principles. For Greco and Hedden (2016), what's appropriate in a case like this is to defer to B and form the belief that "it is rational \*for B\* to play 0.6". For Greco and Hedden, if you know that B is rational, you should trust B's reasoning. But B's reasoning is limited to what is \*her\* best move. B doesn't falsely claim that "play 0.6 is anyone's best move". So, it's not necessarily appropriate to defer to B and form the belief that "it is rational (for A, B, C, etc.) to play 0.6".

I did two things wrong in the phrasing of this principle. One was that the pronouns were very unclear; I couldn’t figure out on reading back who I meant by ‘her’ or ‘their’ on every occasion. I’ve rewritten a lot of sentences, including this one, to make them clearer. Here all I meant in the last clause is that \*B\* will play 0.6.

But more generally, I’ve tried to be clearer in steps like this just what is going on. What I meant here was:

* A believes that B believes that a rational thing to do is play 0.6.
* So, by (believed) Uniqueness, A believes that B believes that the only rational thing to do is play 0.6.
* So, since A thinks B will do the only thing they (i.e., B) think is rational, A believes that B will play 0.6.

At many points in the paper, I’ve tried to replace the pronouns with names, and to spell out the steps involved more carefully.

Thanks again to the referees for very helpful comments.