Questioning Epistemic Requirements

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1 A Puzzle about Modus Ponens and Other Epistemic Rules

1. The following requirements seem plausible, at least at the outset of inquiry:

   Modus Ponens. X is epistemically required to be such that: if at t X believes that ϕ and believes that $\phi \supset \psi$, then at $t' > t$ (i.e., soon after t), X believes that ψ.

   Universal Elimination. X is epistemically required to be such that: if at t X believes that $\forall x(\phi_x)$, then at $t' > t$ (i.e., soon after t), X believes that $\phi[o/x]$, where $\ulcorner x \urcorner$ is free in $\ulcorner \phi \urcorner$ and $\ulcorner \phi[o/x] \urcorner$ is the result of substituting 'o' for $\ulcorner x \urcorner$ in $\ulcorner \phi \urcorner$.

2. But there are apparent counterexamples to it and Modus Ponens.

   Mizoguchi and Kurosawa. Helena has a standing belief that anyone who likes Mizoguchi likes Kurosawa, i.e., believes $\forall X(likes(X, \text{Mizoguchi}) \supset likes(X, \text{Kurosawa})$. Rushing for a train she overhears someone—a stranger in a red hat—declare that they like Mizoguchi. But intuitively Helena is never rationally required to form the belief that this stranger likes Kurosawa—she's just focused on which platform her train is at!

3. By far the most popular thing[1] is to add what I will call a "caring constraint":

   Caring Modus Ponens. X is epistemically required to be such that: if at t X believes that ϕ and believes that $\phi \supset \psi$, and X cares about whether p is true, then at $t' > t$ (i.e., soon after t), X believes that ψ.

   They do this because when Helena does care about whether the person likes Kurosawa, she does seem required to make the inference.

4. Problems: First, notice that the reasoning here completely generalizes.

   Evidentialism. X is epistemically required to be such that: if at t X's overwhelmingly supports ϕ over $\neg\phi$, then at $t' > t$ (i.e., soon after t), X either changes their overall doxastic state so it doesn't, or X comes to believe that ϕ.

5. Second, the solution seems *ad hoc*.

6. Perhaps it's epistemically irrational to load ourselves up with beliefs we don't care about, i.e., with "junk" beliefs.[2]

7. If this is the motivation, it's not a very good one. Most of the beliefs I form, I don't store in long-term memory.

8. Perhaps requirements like Modus Ponens and Universal Elimination would require us to form an infinite number of quite distinct beliefs.

9. But there are a number of ways we can restrict the propositions we're required to believe, so that we need some reason to think caring constraints are the best way. And we often care about an infinite (or open-ended) number of propositions.

10. The other problem with them is that they make the epistemic obligations to which we are subject depend on our interests. Many philosophers worry about doing this sort of thing in epistemology, as well as in other areas like in morality.

11. The first puzzle: there are intuitive epistemic requirements that seem subject to some apparently clear counterexamples; the best extant fixes seem *ad hoc* and to make epistemology overly sensitive to our interests. Can we formulate Modus Ponens, etc. in a general way that is not subject to counterexamples like **Mizoguchi and Kurosawa**, but which is neither *ad hoc* nor overly pragmatized? I will argue that we can.

2 A Puzzle about Having a Question

1. I will say that X has that attitude toward a question Q when $\ulcorner X$ has the question: $Q \urcorner$ is true. This regimentation is inspired by utterances like:

   (1) I have a question: where'd you get that cool hat?

   I will stipulate that having a question is that type of mental state that, when X has it with Q as its object, X's utterance of $\ulcorner$I have the question: $Q \urcorner$ is thereby made true.

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[1] The *locus classicus* is Harman (1986), but see also, e.g., Broome (2013) and Friedman (2017a).

[2] For endorsements of this position, see Harman (1986), Goldman (1986), Williamson (1998), Ryan (1999), Feldman (2000), Field (2009), among others.

2. You may worry it could be utterances like (1) are roundabout ways of simply *asking* the question Q. This view is hard to square with utterances like this:

   (2)   I have a question, whether bats evolved from mice, that I would love to ask an expert, if only I knew one.

   The speaker in (2) isn't asking her interlocutor her question, but merely saying that she *has* the question. I think what makes the report true is some mental state of hers; I call it having that question.

3. There are other ways we can indicate the questions we have. Thus:

   (3)   a. I'm curious [about] whether bats evolved from mice.
         b. I wonder whether bats evolved from mice.
         c. I'm puzzled [about] whether bats evolved from mice.

4. Here's a further claim to nail down the attitude:

   Most General Inquiring Attitude. If X bears Ψ to the question Q, where Ψ is either being curious about, wondering about, or being puzzled about, then X has the question Q.

5. This claim is meant at least in part to be largely stipulative; for others, it's more substantive, i.e., those who also say what the most general inquiring attitude is. E.g., Friedman (2017b) argues that having a question, Q, is *suspending judgment* about Q.

6. But they aren't the same: we can be epistemically required to suspend judgment even when we're not epistemically required to have a question.

7. Here are the questions I'll focus on here: are there epistemic requirements to have questions? and what might they be, if so?

8. To answer them, we need to know what having a question is. Here's my answer:

   Wanting to Know. X has the question: $Q = X$ wants to know the answer to Q.

9. (4)   I have a question: where'd you get that cool hat? But I don't care to know where you got it.

   Such a person is hard to understand. So are these:

   (5)   a. I'm curious about where you got that cool hat, but I don't want to know where you got it.
         b. I wonder where you got that cool hat. But I don't want to know where you got it.

10. Wanting to Know combines with the following principle to generate trouble:

No Epistemic Requirements on Desires. For any person X, X is never epistemically required to have any particular desire or set of desires.

It is common to think epistemic requirements and any kind of epistemic evaluation target only "doxastic" attitudes, e.g., belief, credence, and suspension of judgment.[3]

11. But sometimes we are epistemically required to have a question:

   Bob and logical omniscience. Bob believes propositions—the objects of belief, desire, assertion, etc.—are sets of metaphysically possible worlds, and lots of his other views depend on this view. He is aware of a very difficult problem for this view, that it seems to entail that anyone who believes that 2 + 2 = 4 believes Hesperus is Phosphorus, Fermat's Last Theorem, and maybe even torturing for fun is wrong (if true moral propositions are necessarily true). Finally, though he recognizes that the problem is difficult, he doesn't at all think it unsolvable.

   Bob is faced with a problem for one of his central views—he should have a question about how it is best solved:

   Some Epistemic Requirements to Have Questions. There are some cases in which individuals are epistemically required to have a given question.

12. Wanting to Know, No Epistemic Requirements on Desires, and Some Epistemic Requirements to Have Questions are individually plausible but jointly inconsistent. What to do? That's the second puzzle.

13. Maybe you would reject Wanting to Know. Why? First, you may think there are cases where we are deeply curious about what's in some box we know contains dangerous things that would hurt us if we came to know the box's contents.[4]

14. But note 'want' is ambiguous, polysemous, or context-sensitive:

   Context: *Country X is beautiful with a fascinating culture and history but it is dangerous on account of recent widespread violence.*

   (6)   a. I want to go there now, but it's too dangerous. Hopefully it'll get safer soon.
         b. Because it's so dangerous, I don't want to go there now. Hopefully it'll get safer soon.

   The difference is between some-things-considered and all-things-considered desires.

15. Another argument against Wanting to Know claims that metacognition of this kind is too difficult for animals. I think it's standard practice to ascribe desires of this kind to animals (likely because we have an intuitive *de re/de dicto* distinction).

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[3] See, e.g., Beddor (2019) for a recent example.
[4] For this argument, see Friedman (forthcoming).

16. My positive argument for Wanting to Know: these sorts of desires can do all the sorts of things we'd want having a question to do. So we don't need any other mental states to account for those things.

17. A desire that p = a degree of positive affect (attraction, liking) toward a representation p that functions to elicit and regulate a degree of positive expectation (affective forecast) and positive motivation (striving) toward maintaining or bringing about the act or state of affairs that p portrays; and this degree of positive affect is subsequently modulated by whether the actual experience of performing, realizing, or moving toward p is better than, worse than, or in conformity with, the expectation of it.[5]

18. What is the functional role of having a question?

    (a) When we have a question, we shouldn't have it anymore when we take ourselves to have learned something that answers it.

    (b) If we have certain *sorts* of questions but then find out that knowing the answer isn't that appealing, we won't much have similar questions.

    (c) Having a question should direct our attention to that question and the considerations that bear on answering it.

19. So the functional roles of questions and desires to know go together. So we should accept Wanting to Know. I'm going to argue for a framework out of which natural solutions to both puzzles fall.

3 Comparativism about Epistemic Rationality

1. I will defend this principle and adapt it to epistemology:

   Requirements Comparativism. If ρ is a rational requirement for someone, then ρ can be correctly represented with a sentence of the following form:

   (†) If at t, X's option set is $\Phi = \{\varphi_1, ..., \varphi_n\}$ (or Φ includes such options) and conditions $C_1, ..., C_n$ obtain, then either X φ_{i_1}-s within some (possibly vaguely characterized) time period $(t, t_1]$ or ... or X φ_{i_m}-s within some (possibly vaguely characterized) time period $(t, t_m]$, with each $\varphi_{i_j} \in \Phi$.

2. A rational requirement should mention initial times, options, conditions, and intervals in which to perform one of the "actions" the requirement requires, beginning after the initial time. (I use scare-quotes around 'actions' because of my interest in belief formation, which likely isn't a kind of action.[6])

3. None of Modus Ponens, Caring Modus Ponens, Universal Elimination, and Evidence can be correctly described with a sentence of (†)'s form.

4. Why think Requirements Comparativism is true? Consider the following:

   Maximize Utility. X is epistemically required to be such that if at t X's φ-ing sometime in $(t, t']$ would maximize X's utility, then X φ-s sometime in $(t, t']$.

5. This rule would require me to, e.g., cure cancer now. The most immediate fix is adding 'and X can φ sometime in $(t, t']$' to *Maximize Utility*'s circumstances. But even when S can φ, they might have overwhelming reason to think they cannot.[7]

6. There's a subset of propositions agents can make true that agents ought to focus attention on, evaluate, and compare. Call such sets *option sets*. Maximize Utility is clearly inadequate to the extent that it doesn't invoke them. If we thought we ought to focus our attention on, etc., what we know we can do, we get this view of options:

   Options as Knowledge. In any choice situation X is in, X's option set at t for acting sometime in $(t, t']$ $\Phi = \{\phi: X$ knows that X can ϕ in $(t, t']\}$.

   I think this is false. But still, requirements that invoke it will be more plausible than not invoking options at all, and they will satisfy (†).

7. Modus Ponens is a requirement that governs how we ought to change our views; it calls not for a general theory of options but specifically a theory of epistemic options.

8. By *epistemic* options I mean forming a belief, suspending judgment, etc. But since epistemic options ought to exclude one another, in some cases assume a tacit 'and change one's views in no other way' in option descriptions. Also, agents will normally face different kinds of options, so that the epistemic option set will form a strict subset.

9. What is a person's epistemic option set at a time? Maybe Options as Knowledge is correct. I know of every proposition, or of every proposition I have the conceptual resources to grasp, that I can bear whatever doxastic attitude to it. The proposal:

   $\mathcal{K} = \{$Coming to have credences representable by Cr: Cr is a function from the set P of propositions that S can grasp to $x \in [0, 1]\} \cup \{\varphi$-ing p: φ-ing is either believing, disbelieving, or suspending judgment about, and $p \in P\}$

10. This is too expansive; we ought not to always focus our attention on these "options".

11. Here's a proposal. People form beliefs in part to answer the questions they have, and that questions present *alternative propositions*. Q presents p as an alternative proposition only if, possibly, p answers Q well. This is obvious with simple, "polar" (yes-or-no) questions, like 'did LBJ have JFK assassinated?'. This presents the alternative propositions <LBJ had JFK assassinated> and <LBJ didn't have JFK assassinated>.

12. We also have explicitly restricted 'wh'-questions:

    (7) Of Oscar and Anna, who likely took the cookies?

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[5] See Railton (2012, page 36).

[6] See, e.g., Hieronymi (2006), among many others, for discussion.

[7] See Hedden (2012) for this as an objection to some classic theories of options.

(7) presents <Oscar likely took the cookies>, <Oscar didn't likely take the cookies>, <Anna likely took the cookies>, and <Anna didn't likely take the cookies>.

13. Sometimes 'wh'-questions are at most implicitly restricted. It can be difficult to say *which* alternative propositions are presented:

   (8)   Who is going to the concert?

   People asking questions like (8) won't generally care to know everyone coming.

14. Questions do present *some* alternatives, though not algorithmically. Here's a candidate for how when they do:

   $\mathcal{Q} = \{p\colon S \text{ thinks } p \text{ really might answer } Q \text{ well}\}$

15. Now suppose that S has questions $Q_1, ..., Q_n$. Then we can say that the *core* set of alternative propositions presented to S by the questions she has is:

   $\mathcal{Q}^+ = \mathcal{Q}_1 \cup \mathcal{Q}_2 \cup ... \cup \mathcal{Q}_n,$

   where each $\mathcal{Q}_i$ is defined as $\mathcal{Q}$ was. We can define the *core epistemic options*:

   $\mathcal{C} = \{$Coming to have credences representable by Cr: Cr is a function from the set of of core alternative propositions $\mathcal{Q}^+$ to $x \in [0, 1]\} \cup \{\varphi\text{-ing } p\colon \varphi\text{-ing is either believing, disbelieving, or suspending judgment about, and } p \in \mathcal{Q}^+\}$

   Though actual individuals will have more than these, they're a good start. So, according to Requirements Comparativism, a true (epistemic) rational requirement will have to invoke epistemic options, of which $\mathcal{C}$ forms a core part.

4   Dynamics of Epistemic Option Sets and Requirements to Have Questions

1. Savage (1972) presented a "grand-world" decision theory, with a picture of options like $\mathcal{K}$. How to cut it down? We can't ask individuals to evaluate the options to see if they're worth evaluating—that's evaluating them. Rather, in making a decision, agents should think expanding the set of options wouldn't change their choice.[8]

2. Believing that p, e.g., commits one to thinking one would still believe p if one expanded one's epistemic option set enough to make it, say, $\mathcal{K}$:

   Expansion Stability. X is rationally required to be such that if X has epistemic option set $\Phi = \{\varphi_1, ...\}$ and "chooses" to $\varphi \in \Phi$ at t, then at t, X believes that were they to have expanded their option set to $\Phi' \supset \Phi'$, X would still "choose" to φ at t.

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   [8] This is more or less Joyce (1999)'s view.

3. But we need heuristic principles to help us follow Expansion Stability.

4. This is where the two puzzles make contact. These heuristics we ought to use will, in the most natural analysis, be requirements on the questions we have, and thus if Wanting to Know is right, on our desires to know the answers to certain questions.

5. From my point of view, Lewis (1996)'s Rules—of Attention, of Method, etc.—work as an attempt to develop heuristics for following Expansion Stability, some of the most important rules of thumb for when a possibility is properly ignored. E.g.;

   Resemblance. S is epistemically required to be such that if φ-ing is one of S options at t, then if φ'-ing is saliently similar to φ-ing, then S considers, evaluates, and compares φ'-ing to her other options soon after t, too.

   Some answers to questions are similar to others, making one viable if the other is. 'What dog breed did Oscar have?' might be well answered by <he had a lab> and also by <he had a golden retriever>, since labs are similar to golden retrievers.

6. In believing p on the basis of evidence e, I should consider whether e supports other propositions saliently similar to but possibly incompatible with p. Doing that helps satisfy Expansion Stability; one should want to know whether those possibilities obtain. If you're inclined to believe p on e, you ought to have the question whether there's some other similar proposition q that would be better supported by e, i.e., the question whether q is true—they epistemically ought to have the question, assuming:

   Epistemic Instrumental Principle. Suppose X's satisfying ρ is indispensable (i.e., necessary) means for X's satisfying ρ^*, and ρ^* is an epistemic requirement for X. Then X is epistemically (specifically) required to satisfy ρ.

7. Having questions like this is necessary to satisfy a requirement like Expansion Stability, at least for us. Thus, we can be epistemically required to have certain questions. But if having a question just is wanting to know the answer to that question, then we can be epistemically required to have particular *desires*. So the difference in functional role between belief and desire isn't as great as is sometimes supposed.

8. That's my solution to the second puzzle: we really ought to accept Wanting to Know and Some Epistemic Requirements to Have Questions, and we ought to reject No Epistemic Requirements on Desires. The epistemic requirements that we have on having desires, at least in the presence of Wanting to Know.

9. Attention. X is epistemically required to be such that if at t, X has the question of whether Q and is attending to some alternative φ that answers Q well, then X considers, evaluates, and compares believing (etc.) φ to her other epistemic options soon after t in deciding what to "do", epistemically.

10. If we're already attending to p, the costs of treating it as an option are much lower than if we had to think of it afresh. Since it is an answer to a question we're asking

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ourselves, it won't be a distraction from our epistemic goals. If it's a crazy answer, it will be easy to dismiss it with little effort. If it's not, our inquiry profits from taking it seriously. So either way, Attention seems like a good epistemic requirement.

11. There's another, more abductive argument for Attention appealing to data from the relevant alternatives tradition that I only mention here.

5   *The Optionality of* Modus Ponens

1. Here's what's to be explained:

   A. Modus Ponens is an epistemically bad rule. We need a diagnosis. (*Universal Elimination* is also bad, so the diagnosis should extend to it.)

   B. The diagnosis should be informed by the Kurosawa-type cases.

   C. The diagnosis ought not to concern memory limits. Caring should somehow be relevant, but it'd be better to not simply write them into the conditions.

   With A, in section 3, I argued that Requirements Comparativism is true. Since Modus Ponens and Universal Elimination don't invoke options in the way a rule correctly describable with a sentence of (†)'s form, they are bad rules. All rational rules invoke options. In this section, I will resolve B and C, too.

2. Given the problem I raised for Modus Ponens earlier, here's a minimal fix:

   Optional Modus Ponens. X is epistemically required to be such that if at t, X believes ϕ and $\phi \supset \psi$, and one of X's epistemic options is believing ψ, then X either soon abandons her belief that ϕ or her belief that $\phi \supset \psi$, or soon forms the belief that ψ.

   Requirements Comparativism is compatible with this. So we need to see how it handles **Mizoguchi and Kurosawa** and related cases.

3. A person who has a question cares about the answer. Suppose Helena has the question whether Red likes Kurosawa. Then she cares about the answer to the question. Also, believing (etc.) <Red likes Kurosawa> becomes part of her core epistemic option set $\mathcal{C}$, and thereby becomes an epistemic option. Then Optional Modus Ponens requires that she believe Red likes Kurosawa. This explains why she is required to infer that Red likes Kurosawa when she does care about whether they do.

4. Caring plays a role in what it requires because of the role that options in general play.

5. But maybe she doesn't care about anything that knowing whether the stranger likes Kurosawa would help her answer. In a normal case, Optional Modus Ponens does not require that she form the belief that they do. Believing <that stranger likes Kurosawa> is not one of her epistemic options in any normal way of filling the case out. Believing <that stranger likes Kurosawa> is not in her $\mathcal{C}$ because she is not

asking herself the question whether the stranger likes Kurosawa. Nor will it become an option by anything like Resemblance or Attention.

6. It's routine to modify other epistemic requirements get their optional versions.

7. *¡Gracias por todo, mis amigos y amigas!*

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