In order to be rational you need to know how to reason

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Abstract: In Section 1, we make some preliminary remarks about the concept of *epistemic entitlement*, understood in terms of *ex ante* rationality. In Section 2, we argue that a certain epistemological view – one according to which *ex ante* rationality is solely a function of available reasons – is inadequate. In Sections 3-4 we will flesh out an alternative view about *ex ante* rationality, one according to which forming a certain belief is rational for a subject *S* only when *S* knows how to reason in a certain way. In Section 5 we explore some consequences of our view and we describe the main challenge that we must meet in future work.

Keywords: epistemic rationality; reasons; knowledge-how.

1. *Preliminary remarks*

Consider the following questions: (i) What are we entitled to believe, at any given moment, from an epistemological point-of-view? (ii) In what situations is forming a certain belief epistemically rational or justified for someone? The first question is about the *extension* of propositions that we are entitled to believe, while the second one is about the conditions under which it is rational or justified for someone to form a certain belief. Depending on how we answer question (ii), the answer to (i) will be more or less satisfactory.[1]

In this paper, we are going to deal with questions (i) and (ii). Since our investigation is about the conditions under which one is epistemically entitled to form a certain belief, we cannot start by offering *a definition* of what it is for a subject to be so entitled. At the very least, however, we should offer some

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[1]   Should we use our judgment about which beliefs one is entitled to form in order to decide under what conditions one is entitled to form a belief? Or should we use our judgment about the conditions under which one is entitled to form a belief in order to decide which beliefs one is entitled to form? This is a version of the *Problem of the Criterion* – see Chisholm (1973). We are not assuming that there is *only one way* to proceed here. Still, it seems clear that depending on how we answer one of the questions (i) and (ii) we commit ourselves with a more or less satisfactory answer to the other one.

conceptual clarifications, as well as present some of our basic assumptions on the matter.

First, we are taking the concepts of *rationality* and *justification* to have the same role in the present context. Both concepts apply to certain (potential or actual) beliefs, indexed to a subject *S*, when and only when *S* is epistemically entitled to form (or to maintain) the relevant beliefs.[2] Whenever we use the term "justification", however, we mean *inferential justification*, understood as the type of justification that takes place by virtue of the *reasons* available to one (reasons are taken to be *doxastic attitudes* here––see below).[3] If there are cases of *non-inferential* justification, they are excluded from the scope of our present investigation.[4]

Second, the concept of *epistemic entitlement* relevant to our discussion is expressed by attributions of *ex ante* rationality or justification such as: "It is rational (or justified) for *S* to believe that *φ*" and "Believing *φ* is rational (or justified) for *S*". *Ex ante* rationality is to be contrasted with *ex post* rationality. While a belief may be said to be *ex ante* rational for *S* even when *S* did not form that belief yet, a belief is said to be *ex post* rational for *S* only when it is *rationally held* by *S*. So the distinction between *ex ante* rationality and *ex post* rationality is similar to the one between *propositional* and *doxastic* justification found in contemporary literature.[5] The present work is concerned with *ex ante* rationality only.

Third, we should understand the property of *ex ante* rationality as requiring *conditional maximization* of the epistemic goal of believing truths and avoiding falsehoods.[6] That is, it is rational for *S* to believe that *φ* only if, conditional on

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[2]   "*S* is epistemically entitled to believe that *φ*", "It is rational/justified for *S* to believe that *φ*", "Believing *φ* is rational/justified for *S*" are treated as synonymous here.

[3]   It may sound inappropriate to call the justification one has to believe something by virtue of one's available reasons "inferential". However, *S* may have inferential justification to believe that *φ* without going through any process of inference whose output is a belief in *φ*. So we should understand the qualifier "inferential" in a derivative sense here; we say that *S* has inferential justification to believe that *φ* in virtue of *S*'s reasons *R* when it would take an inferential process for one to rationally believe that *φ* on the basis of *R*. We thank Rodrigo Borges for this observation.

[4]   About whether there is such a thing as non-inferential (or "immediate") justification, see the discussion in Chapter 7 of Steup and Sosa (2005).

[5]   See Kvanvig (2011: 28) about the distinction between propositional and doxastic justification. We avoid using the concept of *propositional justification* because we are going to argue (Section 2) that the fact that *S* has propositional justification to believe that *φ* is not sufficient for the truth of the claim that believing *φ* is rational for *S*. We borrow the use of the *ex ante/ex post* qualifiers from Goldman (1979).

[6]   Whenever we talk about "the epistemic goal" we have in mind the goal we just described. The goal of believing truths and avoiding falsehoods is supposed to be a general epistemic goal, and we will leave it open whether there are more "fine-grained" epistemic goals (like having knowledge) and whether the values of further epistemic goals are derived from the value attributed to this general goal or not. For discussion, see Chapter 10 of Steup and Sosa (2005).

the assumption that the reasons available to *S* are beliefs in *true* propositions, *S* would maximize the epistemic goal by believing *φ*. Of course, this is only a *necessary* condition for epistemic entitlement, and one that must be preserved if we are talking about *epistemic* justification or rationality.

Finally, whenever we talk about *reasons* it is doxastic attitudes that we have in mind and not their propositional contents. That is, we are opting for a "statist" view about the nature of reasons instead of a "propositionalist" one. Arguing for this position, however, would drive us beyond the purposes of the present work,[7] and our conclusions here do not depend on such an assumption. The term 'evidence' will be used to denote the propositional content of an epistemic reason to believe something. So where a belief in *φ*, *Bφ*, is a reason that *S* has to believe something, the proposition *φ* is said to be part of the evidence available to *S*.

With these clarifications in place, let us proceed to our investigation.

2. *Ex ante* rationality as propositional justification

Consider the following attempt to address our question (ii):

(PJ) Believing *φ* is rational or justified for *S* when and only when *S* has good reasons to believe that *φ*.

Let us make clear what is the intended meaning of "*S* has good reasons to believe that *φ*" here.[8] First, if $B\psi_1,...,B\psi_n$ are good reasons that *S* has to believe that *φ*, then $\psi_1,...,\psi_n$ give support to *φ*: *if* $\psi_1,...,\psi_n$ are all true, *then* *φ* is true or probably true.[9] The relevant support relation is an "objective" one, in the sense that it does not supervene on what the subject thinks about confirmation/entailment relations among propositions.

Second, the epistemic status that good reasons are supposed to confer upon the attitude of believing *φ* for *S* must not be defeated by further reasons that are also possessed by *S*.[10] *S* may have reasons to believe that *φ* while she also

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[7]   We direct the reader to what we take to be an appropriate defense of statism about reasons in Turri (2009), where the above distinction is clearly established.

[8]   Since we are talking about *epistemic* rationality, we should understand the condition in (PJ) as stating that *S* has *epistemically good* reasons to believe *φ*.

[9]   One way of explicating the relevant support relation is by means of conditional probability functions: $\psi_1,...,\psi_n$ give support to *φ* when $Pr(\varphi \mid \psi_1 \wedge...\wedge \psi_n) > Pr(\sim\varphi \mid \psi_1 \wedge...\wedge \psi_n)$. We step aside a number of complications here, such as: Is the truth of $Pr(\varphi \mid \psi1 \wedge...\wedge \psi_n) > Pr(\varphi)$ a necessary condition for $\psi_1,...,\psi_n$ to give support to *φ*? What if $\psi_1,...,\psi_n$ cannot be all true at the same time––would they still count as giving support to *φ*? Etc. Some of these points are addressed in Achinstein (2001).

[10]   We use roughly the same concept of *defeasibility* as the one present in Pollock (1987).

has equally strong (or even stronger) reasons to disbelieve/suspend judgment about φ. In such a situation, on the assumption that the reasons S has to disbelieve/suspend judgment about φ are not themselves counterbalanced by further reasons available to S, we do not say that the reasons that S has to believe φ are good reasons for her to believe φ.

Another way of making these points consists in claiming that S has good reasons to believe that φ only when S's total evidence on balance gives support to φ. Let $E = \{\psi_1,...,\psi_n\}$ be some evidence possessed by S and assume that E gives support to φ. Further, let E' contain all the evidence possessed by S that is not in E (that is, E' is the *complement* of E). In this case, we say that S's reasons $R = \{B\psi_1,...,B\psi_n\}$ are good reasons for S to believe that φ only if $E \cup E'$ (that is, the *union of E and E'*) also gives support to φ.

Finally, good reasons must have some positive epistemic status. Superstitious beliefs, wishful thoughts and hunches do not constitute epistemically good reasons to believe whatever gets support from their contents (unless, perhaps, the supported beliefs are "overdetermined", that is, sustained both on the basis of superstition, wishful thinking, etc. *and* on the basis of good reasons). What exactly the positive epistemic status of good reasons must be? Here one may require *knowledge*, *justification*, *reasonableness*, *plausibility*, etc. We will not try to answer this question here, since that would require us to deal with issues that are outside the scope of the present investigation (such as the threat of circularity in the explication of *ex ante* rationality in terms of good reasons). We are just assuming that a certain positive epistemic status must be attached to good reasons.

Summing up, S's reasons R are *good reasons* for S to believe that φ when and only when the propositional content of R gives support to φ, the epistemic status that reasons R confer upon a belief in φ for S is ultimately undefeated, and the members of R are themselves epistemically qualified in a certain way. Assume that this is the intended explication of the notion of *good reasons to believe* in (PJ). Under that assumption, (PJ) says that satisfaction on the part of S of the three conditions stated above is necessary and sufficient for a belief to be *ex ante* rational for S. Since having propositional justification to believe is generally equated with having good reasons to believe (in the sense just described), we can say that (PJ) conceives *ex ante* rationality as propositional justification: believing φ is rational for S when and only when S has propositional justification to believe that φ. That is the answer based on (PJ) given to our question (ii): In what situations is forming a certain belief epistemically rational or justified for someone?

We take it that (PJ) is a widely held view about *ex ante* rationality or inferential

justification.[11] In fact, (PJ) looks just like an evidentialist account of justification, of the type defended by Conee and Feldman (2008: 53): *S* is justified in believing *φ* at *t* iff *S*'s evidence at *t* on balance supports *φ*.[12] But given the answer that (PJ) gives to (ii), it gives an unacceptable answer to our question (i): What are we entitled to believe, at any given moment, from an epistemological point-of-view?

To see why, consider cases of what we will call "unreachable beliefs". A belief is said to be unreachable to a certain subject *S* when *S* is not able to competently form that belief. Examples include, but are not restricted to, beliefs in highly complex propositions supported by one's available evidence and beliefs in propositions that are not complex at all, but such that the inferential path by means of which one could form them is very difficult to instantiate. The objection to (PJ) comes from the fact that, according to (PJ), it may be the case that believing *φ* is rational or justified for *S* even when *S* is not able to competently form a belief in *φ*. That is because one can have propositional justification (understood in the way described above) for an unreachable belief. The problem is: if one can only form a belief that *φ* in a *non-competent way*, then believing *φ* is not justified for one––in general, no one should be entitled to do something unless one can do so competently.

Let us consider a case where (PJ) entails that believing something is epistemically justified for someone even though that person is not able to competently form the relevant belief (therefore not entitled to form the relevant belief).

> AMANDA'S CASE: At time *t* Amanda knows that *p* (any particular proposition). As one can check through basic propositional calculus, *p* entails that $(q \rightarrow \sim p) \rightarrow \sim q$. Unfortunately, however, Amanda is not able to infer that $(q \rightarrow \sim p) \rightarrow \sim q$ from her belief in *p* at time *t*––she does not have the cognitive competence to perform that piece of reasoning (although, of course, she might acquire that competence later, say, by studying propositional logic). Also, she has no further reasons for believing that $(q \rightarrow \sim p) \rightarrow \sim q$ (for example, no reliable testimony told her that the relevant proposition is true), and she has no defeaters for her propositional justification to believe that proposition.

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[11]   By "inferential justification" we mean, again, *ex ante* justification (therefore not *ex post*, or doxastic, justification) that takes place in virtue of the *reasons* available to one, in opposition to *ex ante* justification which purportedly takes place in virtue of other mental states (such as perceptual experiences).

[12]   Conee and Feldman's thesis is supposed to cover not only inferential justification, but also non-inferential justification.

Given that Amanda knows something, p, that gives support to $(q \rightarrow \sim p) \rightarrow \sim q$, and given that her propositional justification for believing $(q \rightarrow \sim p) \rightarrow \sim q$ is undefeated, (PJ) would entail that believing $(q \rightarrow \sim p) \rightarrow \sim q$ is epistemically rational or justified for Amanda at time t.

Amanda, however, is not in a position to competently form a belief in that proposition. In fact, if she were to form the relevant belief she would do so by guessing (or something like that)[13], for we are assuming that she has no way of forming the relevant belief by means of an epistemically correct type of inference.[14] But we will not say that S is epistemically entitled to believe that φ when we know that the only ways available to S to form a belief in φ are epistemically reproachable ones (it is not rational for S to form a belief *in the wrong way*).

We can put it this way: believing φ is not rational or justified for S unless S is in a position to competently form a belief in φ on the basis of S's reasons. Suppose you claim that it is rational or justified for S to believe φ (or that S is entitled to believe φ) in virtue of S's reasons R. Suppose you also claim that S has no way of competently forming a belief in φ on the basis of R. In this case, it would seem that you are taking away with one hand what you gave with the other one. There are many things that get support from our evidence, not all of them we are able to infer to be true. Intuitively, then, unreachable beliefs should not be part of the extension of doxastic attitudes that we are epistemically entitled to form. So having propositional justification is not sufficient for *ex ante* rationality––there is more to epistemic entitlement than just propositional justification. If that is right, then the answer that a proponent of (PJ) gives to question (ii) commits her to an implausible answer to question (i).[15] Call this the "problem of unreachable beliefs".

3. *Fixing the problem*

(PJ) is supposed to be a "one-component" explication of the concept of *ex*

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[13]   Of course, we should also assume that Amanda is not able to have a reliable intuition that $(q \rightarrow \sim p) \rightarrow \sim q$ is true, or that she is able to remember that it is true, etc.

[14]   For the time being, we will count on an intuitive, pre-theoretical, notion of *epistemically correct* types of inference. Examples should include strong inductive inferences and deductively valid ones.

[15]   An anonymous reviewer suggested that it could very often be the case that people (rationally) hold unreachable beliefs, e.g., when we form beliefs in scientific theories but we do not have the scientist's expertise. But in most of these cases we actually perform a competent inference based on reliable testimony: we rationally believe that scientist S is reliable, and that she came up with the theory that t is true and, as a result, we also come to believe that t. It is correct to say that, in these cases, we do not go through the same inferential path as the one the scientist has gone through to reach the verdict that t is true––but that does not mean that the belief in t is unreachable for us at all, since it may be reachable for us through testimonial information and ordinary inductive reasoning.

ante rationality. Such an account is to be contrasted with a "two-components" explication of that concept. A one-component account of *ex ante* rationality says that epistemic entitlement is solely a function of available good reasons, understood in the way we described above. A two-components account of *ex ante* rationality, on the other hand, says that epistemic entitlement is a function not only of available good reasons, but also of possessed *inferential abilities*.[16]

It is important to emphasize, however, that one could still hold that *ex ante* rationality is solely a function of available good reasons while interpreting the availability of reasons as something that itself requires an ability to perform certain pieces of reasoning.[17] That would consist in changing the semantic value that we originally attached to "*S* has good reasons to believe that *φ*" in (PJ). In fact, the idea that available reasons must by their own nature be "usable in reasoning", not just "possessed", seems to be widely held in the contemporary literature.[18]

That means that there are at least two ways of dealing with the problem of unreachable beliefs faced by (PJ): either one interprets the notion *having good reasons to believe* in such a way as to make it the case that the possessor of reasons is thereby able to use them to form the relevant beliefs, or one maintains the condition present in (PJ) without the former interpretation and add to it a condition stating that the subject must have the ability to use her reasons to form the relevant beliefs. There is no relevant difference for our present purposes here. Both ways of "fixing" (PJ) consist in advancing a two-components account of *ex ante* rationality––the only difference being that in the former one the procedural aspect is already embedded in a theory of available reasons. And this is just the contrast that we are considering here: the one between a one-component view, according to which *ex ante* rationality strictly depends on relations of evidential support plus the epistemic statuses of reasons, and a two-components view, according to which *ex ante* rationality is also determined by abilities to reason.

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[16] Our discussion is restricted, remember, to *inferential* justification. That is why we are talking about inferential abilities only, and not about other epistemically relevant abilities as well, such as the ability to remember, to perceive, etc. The distinction we draw here between one-component and two-components accounts of *ex ante* rationality is inspired by Goldman's (2011) distinction between theories of doxastic justification. When it comes to doxastic justification, Goldman describes a two-components theory as one that takes into account both, a certain fit relation that is supposed to hold between the evidence and the supported beliefs (condition present in evidentialist theories of justification), and the reliability of a certain type of cognitive process (condition present in reliabilist theories of justification). When it comes to *ex ante* rationality, so we suggest, a two-components theory is one that takes into account both, a fit relation that is supposed to hold between inferential and pre-inferential doxastic beliefs and the possession of inferential abilities.

[17] We thank Peter Klein and Katia Etcheverry for pressing on this point.

[18] See, for example, Harman (1986), Shah (2006) and Wedgwood (2011).

So, if we keep in mind that (PJ) is a one-component account of *ex ante* rationality, our diagnosis is: (PJ) is false, and we have to find a better explication of the concept of *ex ante* rationality, one according to which it is not rational for one to form those beliefs that are unreachable to one. Examples such as the one presented above show that there are cases where S is propositionally justified in believing φ but, still, believing φ is not rational for S. Something else seems to be required the possession of inferential abilities.

Inferential abilities are abilities to reason in certain ways. We can make sense of this idea by means of the notion of *knowledge of how to reason* (or *knowledge of how to perform inferences*).[19] A subject S has the ability to perform an inference from her reasons R to a belief in φ when and only when S knows how to infer that φ on the basis of R. Now the question becomes: What is it to know how to perform an inference? We cannot give a thorough explication of this notion here, but some points are required to minimally clarify it.[20]

First, knowing how to perform an inference requires having a certain systematic disposition to form certain types of propositional attitudes on the basis of others. As a very simple example, consider a case in which S knows how to infer that a conjunctis true on the basis of S's belief in a conjunction. Here, S will have a disposition to form beliefs in contents of the form φ on the basis of beliefs in contents of the form $(\varphi \wedge \psi)$. This is a *systematic* disposition, since its manifestation is repeatable across different situations. For example, given S's inferential ability that we just mentioned, S will not only have a disposition to believe that *Peter is a philosopher* when she believes that *Peter is a philosopher and a fireman*, but she will also have a disposition to believe that *Germany is in Europe* when she believes that *Germany is in Europe and it is part of the European Union.*

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[19]   For the sake of simplicity, we are using the concepts of *inference* and *reasoning* interchangeably here, although there are cases of reasoning––e.g., hypothetical reasoning––that do not consist in inference.

[20]   Offering a thorough explication of the notion of *knowledge of how to reason* would involve, among other things: (a) Argumentation either in favor of intellectualism or anti-intellectualism about knowledge-how (see Fantl 2012), as this dispute will lurk behind any discussion about particular types of procedural knowledge or, else, (a') Argumentation to the conclusion that one's theory about the relevant type of knowledge-how is independent of that dispute; (b) Consideration of empirical models of reasoning capacities in up-to-date cognitive psychology (see Chater and Oaksford 2001), even if one believes that one's account is independent of empirically informed theories about human reasoning (that is something one would need to argue for); (c) A clear understanding of the conditions under which this sort of ability (knowledge of how to reason) is manifested, alongside an investigation about the semantics of certain counterfactuals whose truths are (purportedly) necessary for the obtaining of this type of knowledge-how; (d) Engagement with the recent epistemological literature on inference (see Boghossian 2014). These are important points, and ones that we are going to deal with in our future investigations about knowledge of how to reason––but they are not in the scope of the present work.

Second, the systematicity of S's disposition (when S knows how to perform an inference) may be more or less general. Having a systematic disposition to perform particular inferences requires being able to instantiate types of inference, and different types may admit a different number of possible instantiations. For example, the type of inference that outputs a belief in a disjunction ($\varphi \vee \psi$) when given a belief in one of its disjuncts as input (for example, a belief in φ) has more instances than the type of inference that outputs a belief in a proposition of the form Ga when given a belief in a proposition of the form $Fa \wedge P(Gx \mid Fx) = .99$ as input (where 'Fa' means that a is F and the unbounded '$P(Gx \mid Fx) = .99$' means that *Ninety nine percent of the objects that are F are also G, or something along these lines*).

Third, just as knowledge-that, or propositional knowledge, requires a non-fragile relation with truth (an "anti-luck" property), knowledge-how, or procedural knowledge, requires a non-fragile relation with success as well. What is the success condition in the particular case of *knowledge of how to reason*? It is *believing on the basis of good reasons* (believing in what is supported by one's evidence). One is successful in performing an inference only when one believes what is true or probably true conditional on one's evidence.[21] When one knows how to infer that φ is true from one's belief in ψ, it must be the case that ψ gives support to φ (otherwise it would not be the case that one *knows* how to infer that φ from one's belief in ψ).

But one can believe something on the basis of good reasons *in the wrong way*, and it is here that the anti-luck consideration comes into play. Examples abound.[22]

As an illustration, let us suppose that Peter believes that *Amanda is suffering* on the basis of his justified belief that *Amanda is crying sadly, and whenever someone is crying sadly he/she is suffering*. But let us suppose, further, that Peter would believe that *Amanda is suffering* had he believed in the truth of *any* proposition that happens to make reference to Amanda––Peter has this pathological habit of believing that *Amanda is suffering* whenever he thinks about her (if Peter's bizarre habit were absent, he would not perform as we described). So had he believed that *Amanda is going to Paris*, or that *Someone loves Amanda*, he would have formed the belief that *Amanda is suffering* as well. Here, Peter forms a certain belief (the belief that *Amanda is suffering*) on the basis of good reasons (his justified belief that *Amanda is crying sadly, and whenever someone is crying sadly he/she is suffering*), but his performance *is not* explained by the claim that he has a certain inferential ability (or the claim

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[21]   Here 'evidence' means, remember, the propositional content of one's available reasons.
[22]   Turri (2010) and Goldman (2011), among others, present examples of this kind.

that he knows how to reason in a certain way).[23] If that were the appropriate explanation for his performance, he would not believe that *Amanda is suffering* had he believed (in a counterfactual situation) that *Amanda is going to Paris*.

To sum up, if it were the case that Peter knows how to perform the relevant inference, and if that were part of the explanation why Peter believed what he did on the basis of the relevant reasons, then it would not be the case that Peter believes what is supported by his evidence *out of luck*. It is just a matter of luck that Peter believes something on the basis of good reasons in this particular case. His success is not repeatable throughout a certain range of cases, and neither would he refrain from believing what he did had he possessed (some specific kinds of) bad reasons instead of the good ones.

With that bit of clarification, we are now in a better position to state a suitable (a two-components) alternative to (PJ). The unsurprising proposal is:[24]

(RA) Believing φ is rational or justified for S when and only when S has good reasons R to believe that φ and S knows how to infer that φ from R.

This explication of the concept of *ex ante* rationality does not imply that it is rational for one to form those beliefs that are unreachable to one and, therefore, it does not commit us to giving an implausible answer to question (i). We will get back to (RA) later.[25],[26]

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[23]   Presumably, the relevant ability would be the ability to infer that a proposition of the form Ga is true when a proposition of the form $Fa \wedge \forall x(Fx \rightarrow Gx)$ is believed to be true.

[24]   Assuming that having good reasons to believe requires being able to use those reasons in a particular way, it turns out that (IJ) just makes explicit in the second condition what is already implicit in the first one––but that does not make (IJ) problematic.

[25]   As it stands, (RA) may require revision: it may be rational for S to believe something "purely" on the basis of S's knowledge of how to reason in a suppositional way––as when one assumes (but does not believe) a proposition, derives a further proposition under that assumption and infers a conditional with the former as antecedent and the latter as consequent. We ignore this purported class of rational beliefs for now and restrict ourselves to the class of beliefs that are made rational in virtue of available reasons. We are going to deal with that possibility and its subtleties in future work. For discussion, see Balcerak Jackson and Balcerak Jackson (2013).

[26]   Although we are not assuming this to be the case, if the notion of *knowledge of how to reason* is properly explicated by the notion of *availability of reliable inferential processes*, (RA) is a process-reliabilist account of inferential justification––only it is about *ex ante* justification, not about *ex post* or doxastic justification. Goldman himself (1979: 21) also suggested a process-reliabilist account of *ex ante* justification, roughly: that believing φ is justified for S at t iff there is a reliable belief-forming process P available to S at t such that the application of P to S's cognitive state at t would result in S having a doxastically justified belief that φ. (The present formulation of Goldman's view differs a little bit from the one in (1979), and it was suggested to us by him in a private conversation, for which we are thankful). A similar thesis is advanced by Turri (2010: 320). These accounts differ from (RA), in that they propose to understand *ex ante* justification in terms of *ex post* justification. We do not think that *ex ante* justification is properly explicated in this way, but arguing for such a conclusion goes beyond the scope of this investigation.

4. *The revival of the unfitted*

We did not yet consider a one-component account of *ex ante* rationality that is also supposed to solve the problem of unreachable beliefs. Here is one alternative to (PJ) that maintains the claim that *ex ante* rationality is strictly a function of available reasons, but seems to avoid that problem:

(*AddBel*) Believing φ is rational or justified for S when and only when S has good reasons R to believe that φ and S justifiably believes that the propositional content of R gives support to φ.[27]

Consider Amanda's case again. (*AddBel*) correctly entails that believing (q → ~p) → ~q is not rational or justified for Amanda. But the explanation why this is true, according to (*AddBel*), is different from the one we gave: it is not *ex ante* rational for Amanda to believe (q → ~p) → ~q *because* she does not believe that *p gives support to* (q → ~p) → ~q. *If* she had this additional (justified) belief, it would be rational for her to believe the relevant proposition.

But this way of dealing with the problem of unreachable beliefs only defers its solution. For now we may frame a new version of Amanda's case where she believes that p and also that *p gives support to* (q → ~p) → ~q but, again, she does not know how to infer that (q → ~p) → ~q from the new set of reasons available to her.[28] Perhaps in this new version she has better reasons for believing that proposition than before, but having better reasons to believe something does not necessarily put one in a position to competently form the relevant belief. And we can easily see that just as the defender of (*AddBel*) can reiterate her requirement, just as well we can present new cases where the relevant subject has more and better reasons for believing the target proposition, but still has no competence to infer it to be true.

Our challenge to the (*AddBel*) defender's explanation of why unreachable beliefs are not *ex ante* rational may be called a "Rylean move", because the way we argue here is similar to one of the ways Gilbert Ryle (1945: 6) argues against

[27]   The plausible version of (*AddBel*) must allow the relevant beliefs about support relations to be manifested in many ways. For example, S's belief that ψ *makes φ true*, or S's belief that *the truth of ψ is a reliable indicator of the truth of φ*, would count as beliefs of the relevant type when $R = \{B\psi\}$. Also, we are ignoring the possible threat of circularity in using the concept of *justifiably held belief* to explain *ex ante* justification, as (*AddBel*) is just supposed to express an informative extensional equivalence about *inferential justification*, not a conceptual reduction of that concept.

[28]   Similarly, for an "awareness" version of (*AddBel*): we can have a new version of Amanda's case where she believes that p and she is aware that *p gives support to* (q → ~p) → ~q but, again, she does not know how to infer that (q → ~p) → ~q on the basis of the new evidence available to her. It also does not help here to postulate that the relevant beliefs about support relations are "implicit" ones, or to point out that cases like the one we just described are very rare.

an *intellectualist* account of knowledge-how: one according to which knowledge-how "is analysable into the knowledge or supposal of some propositions".[29] Ryle's point about knowledge of how to reason is that adding propositions to one's set of assumptions or available reasons does not make one more skilled or more competent in reasoning. He asks us to consider the following case:

"A pupil fails to follow an argument. He understands the premises and he understands the conclusion. But he fails to see that the conclusion follows from the premises. The teacher thinks him rather dull but tries to help. So he tells him that there is an ulterior proposition which he has not considered, namely, that *if these premises are true, the conclusion is true*. The pupil understands this and dutifully recites it alongside the premises, and still fails to see that the conclusion follows from the premises even when accompanied by the assertion that these premises entail this conclusion. So a second hypothetical proposition is added to his store, namely, that the conclusion is true if the premises are true as well as the first hypothetical proposition that if the premises are true the conclusion is true. And still the pupil fails to see. And so on forever. He considers reasons, but he fails to reason."[30]

Although we are not arguing that intellectualism about knowledge-how is false,[31] we are making a similar point to show that (*AddBel*) does not solve the problem of unreachable beliefs. *S* can have all the reasons in the world to believe that φ but, if *S* is not a position to competently form the relevant belief, it will not be correct to claim that believing φ is epistemically permitted for *S* (again, one is not permitted to believe something in the wrong way).

But our Rylean move does not yet show that there is no hope for one-component accounts of *ex ante* rationality. We saw above that knowing how to perform an inference requires having a certain systematic disposition to form certain types of propositional attitudes on the basis of others. It might be thought, however, that having beliefs about support relations also requires having the relevant type of disposition. If that is the case our Rylean move cannot go through, since the fact that *S* believes the propositional content of *R* to give support to φ *guarantees* that *S* has a disposition to competently form a belief in φ on the basis of *R*. So it appears that (*AddBel*) may successfully deal with the problem of unreachable beliefs.[32]

The appearance of a good solution, however, is not long in coming in this case. Notice that what seems to solve the problem here is, again, the presence

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[29]   About the intellectualism/anti-intellectualism debate about knowledge-how, see Fantl (2012).
[30]   Ryle (1945: 6).
[31]   For an influential intellectualist account of knowledge-how in the contemporary literature, see Stanley and Williamson (2001).
[32]   We owe this point to Tito Flores.

of a systematic disposition to form beliefs that are supported by the evidence. The further requirement of beliefs about support relations can only be said to solve the problem *by entailing* the presence of that disposition. That additional requirement, however, is a problematic one: for many cases of beliefs that we regard as *ex ante* justified for S, it is wrong to attribute to S any belief about the relevant support relations. Consider any case where S has reasons $R = \{B\psi_1,...,B\psi_n\}$ and S has the ability to infer that φ from R through several simple reasoning steps but, in virtue of the magnitude of n, the conjunction $\psi_1 \wedge ... \wedge \psi_n$ (or the set of propositions $\{\psi_1,...,\psi_n\}$) is too big to be even considered by S, so that S does not believe that $\psi_1 \wedge ... \wedge \psi_n$ *gives support to φ*. Assuming that the epistemic status that R confers upon $B\varphi$ for S is undefeated, we surely have no problem in granting that believing φ is justified for S, even though S does not believe that $\psi_1 \wedge ... \wedge \psi_n$ *gives support to φ*.

So (*AddBel*) does not work after all, and our best option still is (RA).

5. *Concluding remarks*

We have been defending (RA), a two-components account of *ex ante* rationality. Our claim so far is that it deals with the problem of unreachable beliefs and that it is superior to a one-component account such as (*AddBel*) in that regard. We should not expect from (RA) any drastic restriction on the beliefs that we are epistemically entitled to form. We paradigmatically attribute *ex ante* justification or entitlement to beliefs that the relevant subject is able to competently form. So it appears that our response to question (ii), about the conditions for *ex ante* justification, does not commit us to giving an inadequate answer to question (i), about the extension of *ex ante* justified beliefs. Yet, it might be thought that (a) our thesis (RA) is trivial, in that it does not have anything new to say about general principles of epistemic entitlement and that (b) we still have to explicate the knowledge-how condition present in (RA) in more detail before recommending such thesis.

When it comes to (a), we would like to present two relevant consequences of (RA). We take it that these consequences show that (RA) is not trivial at all. First, even when the same set of reasons R is available to two different subjects, S_1 and S_2, it might be the case that believing φ is rational for one of them but not to the other: S_1 may know how to infer that φ from R while S_2 does not, or vice-versa. Such a result conflicts with Conee and Feldman's[33] "strengthening" of the general evidentialist thesis (we adapt Conee and Feldman's thesis to the

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[33]   Conee and Feldman (2008: 83).

special case of inferential justification):

(SE) Necessarily, if S_1 is inferentially justified in believing φ, and R is the set of reasons available to S_1 then (1) on balance the content of R gives support to φ, and (2) if R is the set of reasons available to S_2, then S_2 is justified in believing φ.

So if (RA) is true, (SE) is false.[34]

Second, some "closure" principles of justification are entailed to be false.[35] In particular:

(C1) If S justifiably believes that ψ and ψ entails φ, then believing φ is justified for S

and:

(C2) If S justifiably believes that ψ and S knows that ψ entails φ, then believing φ is justified for S,

as well as their "multi-premise" versions are false if (RA) is true. That is because S may not know how to infer that φ is true from her belief in ψ, even when S knows that ψ entails φ. So these principles would be true only as far as they apply for (range over) propositions ψ, φ such that S knows how to infer that φ from her belief in ψ.

When it comes to (b) we acknowledge that, as defenders of (RA), we still have to offer a plausible account of what it is to know how to perform an inference, as we have yet to find an answer to the question: How should we distinguish epistemically correct types of inference from epistemically incorrect ones? We have been counting on a pre-theoretical understanding of these notions here, but we surely need to make them more precise before recommending (RA). So, our next step is to find a suitable explication of the concept of *knowledge of how to reason*.

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[34]   From here it does not follow that the following "uniqueness thesis" is false. For any subject S, set of reasons R and proposition φ, there is at most one doxastic attitude that is rational for S to have toward φ on the basis of R. That thesis is consistent with (RA). About the uniqueness thesis, see Ballantyne and Coffman (2011).

[35]   About epistemic "closure" principles, see Hales (1995).

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