Knowledge Exclusion and the Rationality of Belief

Here are two principles relating knowledge and belief: First, it is necessarily the case that if an agent knows that p, then the agent does not believe that $\sim p$. Call the principle expressed by this claim *Knowledge Exclusion*. Second, it is necessarily the case that if an agent believes that q, then the agent does not believe that $\sim q$.[1] Call the principle expressed by this claim *Belief Exclusion*. Many consider it reasonable to reject Belief Exclusion and accept Knowledge Exclusion.[2] I will argue that doing so is in fact not reasonable: If one rejects Belief Exclusion, then one ought to also reject Knowledge Exclusion. If I am correct, then those inclined to hold the former pair of attitudes must reexamine some common assumptions about the relationship between knowledge, belief, and rationality. I will argue for my preferred view on how these assumptions should be rethought as well.

That one ought not both reject Belief Exclusion and accept Knowledge Exclusion is surprising. Of course, if one instead accepts Belief Exclusion, then given the common assumption that knowledge implies belief, one ought to also accept Knowledge Exclusion. But Belief Exclusion is not the typical motive for accepting Knowledge Exclusion. Knowledge Exclusion is occasionally asserted as an obvious truth. (Paluch 1967: 268) More often, it is tacitly endorsed through the acceptance of a 'no mental state defeater' condition on knowledge. If Knowledge Exclusion is false, there is a case in which an agent believes that $\sim p$ and nevertheless knows that p. Many find

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[1] I use two different propositional variables since these are two different principles. The proposition denoted by the variable in each principle may or may not be identical.
[2] See the list of supporting references at footnote 4 and footnote 3, respectively.

it intuitively true that an agent's belief that ~p defeats knowledge that p and so think that such a case is impossible apart from any consideration of the truth of Belief Exclusion.[3]

At the same time, many consider it reasonable to reject Belief Exclusion. If it is possible for an agent to have simultaneous contradictory beliefs, then Belief Exclusion is false. The possibility of simultaneous contradictory beliefs of the kind I will discuss in this paper is plausibly supported by a variety of empirical evidence (Rudiak-Gould 2011, Rose *et al*. 2014, Pickard 2016: 292–293) and has been endorsed by numerous philosophers.[4] Accepting Belief Exclusion also conflicts with the philosophical project of dialetheism, including the sincere avowals of its practitioners to have had simultaneous contradictory beliefs. (Priest 2006: 96–98) So while there are those who support Belief Exclusion,[5] many others have found its rejection reasonable. For these rejecters of Belief Exclusion my claim should be especially interesting, since they cannot appeal to Belief Exclusion to settle whether they ought to accept Knowledge Exclusion.

You might expect that my main argument has something to do with guises and times, but this is not the case. Let us understand that what is known or believed in an instance of these principles is known or believed *under the same guise and at the same time*.[6] Alternatively, you

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[3] For a sampling of those who make this claim, see Goldman (1986: 62), Plantinga (2000: 365), Reed (2006: 188–189), Bergmann (2006: 163–165), Lackey (2008: 44–45) and Goldberg (2013: 168).

[4] See, for example, Meyer (1971: 814), Armstrong (1973: 104–106), Davidson (2004a: 200), Davidson (2004b: 207), Raz (2005: 19) and Gertler (2011: 141).

[5] See Foley (1987) and Schwitzgebel (2010: 544). One can also charge rejecters of Belief Exclusion, such as dialetheists, with mistaking beliefs for aliefs, in-between beliefs, or other belief-like states. But as this is a debate between those who want to accept and those who want to reject Belief Exclusion, I take no stand on the issue here.

[6] The notion 'guise' does not require an exact definition for my purposes. I add this qualification to indicate that these principles are not incompatible because of an agent's failure to recognize that two different guises present the same proposition, such as when Lois Lane knows that Superman flies while believing that Clark Kent does not fly.

might expect that it has something to do with the psychodynamics of belief. Consider a variant on a case proposed by Gilbert Harman. (1986: 5) You believe that there are Cheerios in the cupboard. Opening the cupboard, you see – and thereby know – that there are no Cheerios in the cupboard. If things go normally, you drop your belief that there are Cheerios in the cupboard. But dropping this belief takes time, which arguably makes both Knowledge and Belief Exclusion false. This mundane reason also plays no role in my argument.

The argument I propose instead involves a case in which an agent uses the fact that she has contradictory beliefs towards p as evidence for p.[7] I show that as long as we accept that an agent can know that *if* she believes p and believes $\sim p$, *then p*, and at the same time can also know that she both believes p and believes $\sim p$, then we should also accept that she can know that p at that time.[8] Given the way I set up this case, whether the agent's belief that $\sim p$ lingers more than a fleeting moment, or even permanently, after she comes to know that p will not matter for whether she continues to know that p. This shows that one ought not reject Belief Exclusion and accept Knowledge Exclusion.

One might object that the view that one has knowledge in this case is incoherent because knowledge requires rational belief. Assuming (as I do throughout) that knowledge entails belief, a counterexample to Knowledge Exclusion is a case in which an agent has contradictory beliefs.

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[7] I use the locution 'contradictory beliefs' to always mean a pair of beliefs the objects of which contradict each other, such as the belief that p and the belief that $\sim p$. Contradictory beliefs are distinct from a belief in a contradiction, such as the belief that $p \& \sim p$.

[8] I do not claim that cases of this sort regularly or ever have happened. Since my claim is about the possible relations between knowledge and belief, the rarity of such cases does not undermine my argument.

This conflicts with the common assumptions that contradictory beliefs are both irrational and that irrational beliefs cannot be knowledge.

I respond by arguing that the relations between contradictory beliefs, rationality, and knowledge are not so straightforward. Here I find occasion to think through select instances of the preface paradox. I argue that there are counterexamples to Knowledge Exclusion in which the agent in question nevertheless has beliefs that are both rational. We are not thereby incorrect in judging that such an agent has rationally failed in some respect. To explain why, I appeal to a slight extension of Lasonen-Aarnio's (2010) considerations about unreasonable knowledge.

1. The Argument

To establish my main claim, let us suppose that one rejects Belief Exclusion. One then accepts that it is possible for an agent to have contradictory beliefs towards a proposition. Once we admit this possibility, the following case dramatizes how rejecting Belief Exclusion can conflict with accepting Knowledge Exclusion.

Suppose that S is a chicken sexer, although by first appearances not a very good one. S sexes chicks by touch. When she does this, most of the time she either forms the belief that the chick she holds is male, forms the belief that the chick is not male, or forms no belief either way. Yet sometimes the instant she touches a chick, she distinctly has the belief that the chick is male and the belief that the chick is not male pop into her head simultaneously.

Unnerved by this, S has herself tested. As a result of an application of the best science (which consists in her consulting neuroscientists, reading MRI reports, and so forth) she comes to learn, and so know, that the following material conditional is true about her beliefs:

(C1) $\forall x \forall t \; [\sim Mx \; \& \; Txt \supset (\sim B_S^t Mx \; \lor \; \sim B_S^t \sim Mx)]$[9]

C1 says: 'for all x, for all t, if x is not a male chick and S touches x at t, then either it is not the case that S believes at t that x is a male chick or it is not the case that S believes at t that x is not a male chick.' In short, S has learned that in the moment in which she touches a chick c, if $\sim Mc$, then either she does not believe Mc or she does not believe $\sim Mc$.

Next, suppose S returns to her chicken sexing and, as before, at some time t in which she touches a chick c, the belief that Mc and the belief that $\sim Mc$ distinctly pop into her head and S knows this.[10] Now, however, things are different. If another agent, S*, knew that S had these beliefs when S touched c and also knew C1, then S* would be in excellent position to know Mc. For by contraposing C1, S* can use both items of knowledge to competently deduce, and thereby come to know, Mc.

Yet if S* can know Mc in this way, then S can as well, considering that they share the same relevant evidence. Doing so involves S rebasing her belief in Mc. Where initially S believed Mc on the basis of some kind of process involving touch, now she persists in this belief on a basis

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[9] Henceforth I drop the superscripts and subscripts t and S from $B_S^t Mc$ and $B_S^t \sim Mc$ for the sake of clarity.

[10] One might object that we never have immediate awareness of our beliefs. Also, one might object that our best science cannot establish a truth like C1. These objections do not undermine my argument. Again, this case is only one way to dramatize how the principles I consider are related. I require only that my reader agree that S can both know C1 and know that S has contradictory beliefs towards Mc at the same time. There are many ways this can happen. S could alternatively gain such knowledge either by testimony from an oracle, by making inductive inferences or by consulting trusted friends who have been studying her behavior.

involving her theoretical knowledge of C1, her introspective and empirical knowledge of both her contradictory beliefs and the objects she has touched and her ability to make competent deductions. Each of these processes operates wholly independently of her process of belief formation about the sex of chicks that goes by touch alone, so any abnormalities of this latter process need not interfere with the former.

While S is obviously abnormally constituted insofar as she sometimes has contradictory beliefs in the course of chicken sexing, if things go normally after she brings her theoretical knowledge of C1 to bear on BMc and B~Mc, she will drop B~Mc like in Harman's Cheerios case. Suppose, however, that this does not happen: her belief that ~Mc lingers. There is no good reason, given the assumptions we have made, that this should prevent S from knowing Mc. She can know Mc even if her belief that ~Mc is stubborn and remains in the face of all evidence to the contrary. This is because she has used an excellent knowledge-conferring process that involves her scientific knowledge and her introspective and deductive abilities to support her belief that Mc. This process is just as – if not more – secure and reliable than many of the processes by which we ordinarily gain knowledge, which also frequently involve combining information from different sources and abilities. If this process is not good enough to produce knowledge for S, then we know very little.

Of course her belief that ~Mc might be causally efficacious so that her holding it makes her drop her belief in C1, but then she will cease knowing Mc because she loses a crucial piece of knowledge that supports it, not because of any conceptual relation between B~Mc and her knowing that Mc. At any rate, it is not necessary that she drops this belief for this reason. Our beliefs can be causally related or unrelated to each other in all sorts of strange ways.

I claim that this case suffices to establish that if one rejects Belief Exclusion, then one ought to also reject Knowledge Exclusion. If one wants to coherently reject the former and yet accept the latter, then then one has the following options: (a) reject that S can know by introspection that both BMc and B$\sim Mc$ at t, (b) reject that S can empirically know that Tct, (c) reject that S can have theoretical knowledge of C1, or else (d) argue that the above case is a plausible counterexample to the principle that knowledge is closed under competent deduction. None of these is a promising option.

2. A Response

One may of course attempt to show that there are other options. A natural alternative way to resist my case involves the purported connection between knowledge and rationality, namely, that knowledge that p requires rational belief that p. Another common assumption is that contradictory beliefs are both irrational when held at the same time, no matter how one acquired them. If both these assumptions are correct, then my argument is flawed.

However, the above example puts the assumption that contradictory beliefs are both irrational in doubt. When S initially forms BMc and B$\sim Mc$, both certainly appear to be irrational. Yet this changes once S comes to know Mc and her belief that $\sim Mc$ lingers. It is compelling that S rationally believes Mc at this point because nothing is objectionable about the process by which S comes to hold this belief. While B$\sim Mc$ does seem to be held irrationally, this fact alone does not provide any obvious reason why the rationality of BMc is compromised. This is especially so considering that BMc and B$\sim Mc$ are held on independent bases. The corruption of one member of a pair of beliefs does not imply the corruption of both.

At this point, one may concede that I have shown that rejecters of Belief Exclusion ought to also reject Knowledge Exclusion but insist that there is a restricted version of Knowledge Exclusion that rejecters of Belief Exclusion can fall back on. If B~Mc is irrational in the above example, then what I've said so far does not put pressure on the view that a rational belief that ~p defeats knowledge that p.[11] Consequently, rejecters of Belief Exclusion can fall back on *Rational* Knowledge Exclusion: It is necessarily the case that if an agent knows that p, then the agent does not *rationally* believe that ~p.

My reply is that if Belief Exclusion is false, then there are cases in which an agent can have contradictory beliefs that are individually rational. Furthermore, some of these cases are counterexamples to Rational Knowledge Exclusion, given some plausible closure principles of rational belief.

Consider the following variant of Makinson's (1965) preface paradox. A researcher has amassed a tome of logically independent, contingent statements (the *book statements*) each of which she rationally believes on the basis of meticulous research such that any single one of them, if true, is known by the researcher. At the same time, she also has excellent inductive evidence for the *preface statement*, which is the negation of the conjunction of all the book statements. In particular, she knows that all of the many books at least as long as hers contain at least one false claim. A belief in the preface statement based on this evidence, if true, would also be knowledge.

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[11] The view that *only* rational beliefs defeat knowledge is controversial. See Plantinga (2000: 364–365) and Bergman (2006: 164–165) for a dissenting opinion. Moreover, we may plausibly remove the intuition that B~Mc is irrational in the above example by stipulating that B~Mc has some phenomenal property BMc lacks, such as vivacity or cogency. My following response is not the only way to reply to the fallback position.

We can then distinguish the following two cases the researcher may be in:

(Case1) Each of the book statements is believed and also known.

(Case2) Each of the book statements is believed but at least one is not known because it is false.

For convenience, let us designate the conjunction of all the book statements by *b*, so that the preface statement is designated by ~*b*.

Now, let us consider these cases in light of our rejection of Knowledge Exclusion. Suppose that the researcher is in Case1. By hypothesis, she rationally believes each book statement. Next, suppose that she comes to believe *b* through competently deducing it from these statements. Since knowledge is closed under competent deduction, this belief is knowledge. And since rational belief is closed under competent deduction from premises that are both known and rationally believed, this belief is also rational. But suppose the researcher then remembers her excellent inductive evidence for ~*b* and believes ~*b* on this basis, although without dropping her belief that *b*.

Where then do we stand on the question of the rationality of the researcher's beliefs? Given the closure principles stated above, the researcher both knows and rationally believes that *b*. Like the chicken sexer, she has formed this belief through an excellent process, and while she has contradictory beliefs, she holds them on different bases.

We should also judge that her belief that ~*b* is rational. For consider a counterfactual situation in which we had kept all the details the same except that we had started by supposing that the agent was in Case2. Then we would have judged that the agent's belief that ~*b* was rational. After all, she forms it though making an excellent inductive inference. But the inductive base on which the agent forms her belief in this counterfactual situation is the same as the one

in the situation we initially described, so if her belief is rational in the former situation it is plausibly also rational in the latter. Consequently, we have an instance in which an agent plausibly has two contradictory but rational beliefs, one of which is knowledge.

One will protest that the researcher is surely being irrational; the feeling remains that she has done something wrong. I agree, but the point is that whatever she has done wrong impugns the rationality of neither her belief that *b* nor of her belief that ~*b*. We should agree that she is in some respect irrational, but we should also agree that it is not in the respect of her having these contradictory beliefs, given the eminently rational deductive and inductive processes by which she has acquired each of them.

In trying to make sense of this situation, I find the considerations of Lasonen-Aarnio's (2010) helpful. We should distinguish, she claims, a belief's manifesting knowledge conducive dispositions from a belief's being knowledge; in particular, the former is not a necessary condition for the latter. (2010: 2) If we accept this distinction in the present case, we should accept that the researcher's belief that *b* is knowledge even though the researcher is in some respect failing to manifest a knowledge conducive disposition in forming this belief.

What dispositions an agent manifests often depends on what rules an agent adopts. We should note, however, that adopting a rule often results in an agent manifesting dispositions that do not instantiate that rule. An agent who adopts the rule 'Believe that *p* when one sees that *p*' will be disposed to believe *p* not only when she sees that *p* but also when it merely appears to her that *p*. (Lasonen-Aarnio 2010: 14) Nevertheless, this rule is a good rule for an agent to adopt because it results in the agent having dispositions that are overall conducive to her forming beliefs that are knowledge. Seldom do we fall prey to false appearances.

Our researcher, by contrast, has not adopted a good rule. At least one rule she has adopted is this: believe *p* when *p* is competently deduced from premises individually likely to be known in the presence of strong inductive evidence that at least one of those premises is false.[12] As a result of adopting this rule, the researcher will be disposed to form the belief that *b*, and this belief will be knowledge when it is applied in Case1. But her being in Case1 is exceptional. Given the researcher's limited capacity to discriminate between Case1 and Case2 and that most of the cases she is in are instances of Case2, in adopting this rule the agent will manifest a disposition that results in her forming beliefs that are not knowledge in most of the cases she follows it.

Here is where we acquire an explanation of our intuition that the agent is irrational in our preface case. Lasonen-Aarnio observes that we judge agents to be unreasonable when they manifest dispositions that are not knowledge conducive. (2010: 12) It is not much of a stretch to claim that the same goes for our intuitions about rationality: We also judge agents to be irrational when they manifest dispositions that are not knowledge conducive.[13] And in the present case, this judgement is correct. The researcher has done something irrational in her acquiring contradictory beliefs: she has irrationally adopted a bad rule. Yet that an agent has irrationally adopted a rule does not entail that everything the agent does while following that rule is

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[12] Compare this to the bad rule that Lasonen-Aarnio suggests at (2010: 15). I do not claim that this is the only bad rule that our researcher has adopted; it is reasonable to think that there are others.

[13] I am not sure to what extent Lasonen-Aarnio would welcome this extension of her view. In her (2010), she eschews use of the term 'rational' and references the concept most directly in relation to considerations of instrumental rationality. (2010: 15) Yet insofar as a belief's being rational, like its being knowledge, depends on the characteristics of the process by which it is acquired, the extension is a natural one to make. See Podgorski (2016) for a defense of the view that rational norms govern processes of belief formation as opposed to configurations of synchronic doxastic states.

irrational. Our researcher is rational in forming the belief that *b* and is also rational in forming the belief *~b* because she acquired each through a rational process.

3. Conclusion

I have shown that if one rejects Belief Exclusion, one ought to also reject both Knowledge Exclusion and Rational Knowledge Exclusion. Furthermore, I have shown how Lasonen-Aarnio's distinction between a belief's manifesting knowledge conducive dispositions and a belief's being knowledge provides one way to reject both Belief Exclusion and Rational Knowledge Exclusion while retaining fidelity to intuitions about rationality. Knowledge Exclusion and its variants are principles that those who reject Belief Exclusion can and should learn to live without.[14]

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