Luminosity, Reliability, and the Sorites

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In his influential book *Knowledge and its Limits*, Timothy Williamson argues that virtually no condition is luminous.\(^1\) A condition C is luminous just in case (L) holds

\[(L) \text{ For every case } a, \text{ if in } a \text{ C obtains, then in } a \text{ one is in a position to know that } C \text{ obtains.}\]

I will argue that Williamson’s argument is unsuccessful. Either the argument requires paradoxical sorites reasoning, or the defender of luminosity can reject a crucial premise. I will then examine a reconstructed argument for the denial of luminosity and argue that it fails as well.

Williamson’s argument focuses on the condition that one feels cold. As he tells us, “It appears to have about as good a chance as any non-trivial condition of being luminous”. Williamson argues as follows:

Consider a morning on which one feels freezing cold at dawn, very slowly warms up and feels hot by noon ... Suppose ... that throughout the process one thoroughly considers how cold or how hot one feels. One’s confidence that one feels cold gradually decreases ... Let \( t_0, t_1, \ldots, t_n \) be a series of times at one millisecond intervals from dawn to noon. Let \( a_t \) be the case at \( t_i \) ... Consider a time \( t_i \) between \( t_0 \) and \( t_n \) and suppose that at \( t_i \) one knows that one feels cold. Thus one is at least reasonably confident that one feels cold, for otherwise one would not know. Moreover this confidence must be reliably based, for

\(^1\) Knowledge and its Limits, Oxford University Press, 2000 (All page references are to this text.)
otherwise one would still not *know* that one feels cold. Now at $t_{i+1}$ one is almost equally confident that one feels cold, by the description of the case. So if one does not feel cold at $t_{i+1}$, then one's confidence at $t_i$ that one feels cold is not reliably based, for one's almost equal confidence on a similar basis a millisecond later that one felt cold is mistaken. (96–97)

From this Williamson concludes

(1) If in $a_i$ one knows one feels cold, then in $a_{i+1}$ one feels cold.

(1) is the crucial premise in Williamson's *reductio* argument for the failure of (L) with respect to the condition that one feels cold. Combined with (L) it yields the conclusion that if one feels cold at $a_i$, then one feels cold at $a_{i+1}$. So it follows from one's feeling cold at dawn, that one feels cold at noon. But by the description of the case, one feels cold at dawn but not at noon. Williamson defends (1) and concludes that (L) is false.

Let us examine more closely how Williamson derives (1). In the passage above, Williamson is claiming that a reliability constraint on knowledge supports the following claim:

(2) If at $t_i$ one knows one feels cold, and at $t_{i+1}$ one is almost equally confident that one feels cold, then at $t_{i+1}$ one feels cold.

(1) follows from (2) and the description of the case.

What precisely is the nature of this reliability constraint? In his discussion of the role of reliability in the argument, Williamson tells us that the intuitive idea behind the reasoning for (1) is

(3) If one believes ... to some degree that a condition C obtains, when in fact it does, and at a very slightly later time, one believes ... on a very similar basis, to a very slightly lower degree that C obtains, when in fact it does not, then one's earlier belief is not reliable enough to constitute knowledge. ² (101)

² In Williamson's statement of (3) he says "believes outright" where I have said "believes". He tells us that "one believes $p$ outright when one is willing to use $p$ as a premise in practical reasoning" and that "... we can think of one's degree of outright belief in $p$ as the degree to which one relies on $p$". He contrasts notion of degrees of outright belief with the notion of subjective probabilities as measured by one's betting behavior. Williamson also tells us that this notion of outright belief is the one at work in his argument for (1). Hereafter by 'believe' I will mean 'believe outright'.
Since one knows C obtains only if one has a true belief reliable enough to know C obtains, (3) yields the following reliability constraint on knowledge:

\[(4) \text{ If one knows that a condition } C \text{ obtains and at very slightly later time one believes on a very similar basis to a very slightly lower degree that } C \text{ obtains, then } C \text{ obtains at that later time.}\]

Does (4) support (2)? One difference between (4) and (2) is that (2) is expressed in terms of "degrees of confidence" whereas (4) is formulated in terms of "degrees of belief". Since these expressions are notational variants, we can reformulate (2) as

\[(2') \text{ If at } t_i \text{ one knows one feels cold, and at } t_{i+1} \text{ one has a very slightly lower degree of belief that one feels cold, then at } t_{i+1} \text{ one feels cold.}\]

Does (4) support (2'), given the description of the case? Before we can answer that question, we need to sort out an ambiguity in the phrase "one believes ... to some degree" that occurs in (3). There are two notions of believing that are relevant to the anti-luminosity argument. There is the notion of believing to a certain degree and there is the notion of believing simpliciter. Where one believes \( p \) to degree \( d \), \( d \) may be too low for one to count as believing \( p \) simpliciter. So whereas believing \( p \) simpliciter entails believing \( p \) to some degree, believing \( p \) to some degree does not entail believing \( p \) simpliciter. Thus there are two readings of "one believes to a very slightly lower degree that \( C \) obtains" as it occurs in (4). On the stronger reading, it implies that one believes simpliciter that \( C \) obtains. On the weaker reading there is no such implication.

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3 If one's having a true belief reliable enough for knowing \( C \) obtains does not entail that one knows \( C \) obtains, then (3) yields a slightly stronger reliability constraint, viz., If one has a true belief reliable enough for knowledge that \( C \) obtains and at very slightly later time one believes on a very similar basis to a very slightly lower degree that \( C \) obtains, then \( C \) obtains at that later time. But the difference between this principle and the weaker (4) will not matter for the argument.

4 We noted earlier (note 2) that where Williamson talks about believing, he means what he calls "believing outright". But the distinction between believing to a certain degree and believing simpliciter still applies to this notion of believing outright. When discussing (1), Williamson says, "Even if one's confidence at \( t_i \) was just enough to count as belief, while one's confidence at \( t_{i+1} \) falls just short of belief ... "(97) Here Williamson contrasts degree of confidence/belief with belief simpliciter. Since when Williamson talks about belief/confidence, he means outright belief, Williamson is here talking about degrees of outright belief and outright belief simpliciter. Thus according to Williamson, one's degree of outright belief can be too low to count as outright belief simpliciter.
Thus we have a strong reading and a weak reading of the conditional (4). Since the phrase "one believes to a slightly lesser degree" occurs in the antecedent of (4), the stronger interpretation of that phrase yields the weaker conditional. Let (4) be interpreted as expressing this weaker conditional. The stronger conditional, which has the weaker interpretation of the phrase, we can express thus

(5) If one knows that a condition C obtains and if at a very slightly later time one has, on a very similar basis, a very slightly lower degree of belief that C obtains, then C obtains at that later time.

Now our original question has become two questions: Does the weaker conditional (4) entail (2')? And if not, does the stronger conditional (5) entail (2')?

Consider first (4). Given the description of the case, (4) yields

(6) If at $t_i$ one knows that one feels cold and if at $t_{i+1}$ one believes to a very slightly lower degree that one feels cold, then at $t_{i+1}$ one feels cold.

For the same reason that (4) is weaker than (5), (6) is weaker than (2'). Thus we cannot derive (2') from (6) alone. To derive (2'), we need the conjunction of (6) and

(7) If at $t_{i+1}$ one has a very slightly lower degree of belief that one feels cold, then at $t_{i+1}$ one believes to a slightly lower degree that one feels cold.

Given the strong interpretation of "one believes to a slightly lower degree" in (4), (7) will be true only given the truth of

(8) If at $t_{i+1}$ one has a very slightly lower degree of belief that one feels cold, then at $t_{i+1}$ one believes that one feels cold.

What would justify (8)? At $t_t$ one knows one feels cold. Thus we have

(9) At $t_t$, one believes one feels cold

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5 Here and throughout the paper, I am reading the conditionals as material conditionals.

6 Presumably, Williamson assumes that knowing $p$ entails believing $p$ when he notes that if one is not reasonably confident that one feels cold, then one does not know he feels cold.
Then we can get to (8) from (9) and

(10) If at \( t_i \) one believes one feels cold, and at \( t_{i+1} \) one has a very slightly lower degree of belief that one feels cold, then at \( t_{i+1} \) one believes one feels cold.

But to appeal to (10) would be to exploit the vagueness of 'believes', engaging in reasoning akin to the reasoning in a sorites paradox.\(^7\)

One might try to avoid appealing to (10) by arguing that knowing \( p \) entails believing \( p \) to degree \( d \), where \( d \) is significantly above the threshold for belief *simpliciter*. Then one could argue for (8) from the stronger premise

\[ (9') \text{At } t_i \text{ one believes to degree } d \text{ that one feels cold.} \]

and the weaker premise

\[ (10') \text{If at } t_i \text{ one believes to degree } d \text{ that one feels cold, and at } t_{i+1} \text{ one has a very slightly lower degree of belief that one feels cold, then at } t_{i+1} \text{ one believes one feels cold.} \]

(10') is not a sorites premise. Thus we could derive (8) without relying on sorites reasoning. But absent some argument, I do not see that one's knowing at \( t_i \) that one feels cold justifies (9'). Insofar as we are trying to derive (8), we are assuming that knowing entails believing. But it is not clear why, if knowing requires believing, it requires believing to a degree significantly above the threshold for believing *simpliciter*. If one can just barely believe \( p \), then one can just barely know \( p \).

Williamson himself cannot be accused of engaging in the sorites reasoning outlined above, because he endorses (1) even on the supposition that (10) is false:

Even if one's confidence at \( t_i \) was just enough to count as belief, while one's confidence at \( t_{i+1} \) falls just short of belief, what constituted that belief at \( t_i \) was largely misplaced confidence; the belief fell short of knowledge. One's confidence at \( t_i \) was reliably based in the way required for knowledge only if one feels cold at \( t_{i+1} \). (97)

\(^7\) Were we to sharpen the expression 'believes', one of the instances of (1) would be false. As Williamson notes, it is characteristics of sorites paradoxes that sharpening one of the relevantly vague expressions results in a false premise.
Absent some way other than the sorites reasoning of getting from (4) to (2'), (4) cannot support (2'). Can the stronger conditional (5) support (2')? Here the entailment is trivial. Given the description of the case, (5) entails (2').

So the weaker conditional (4) cannot support (2') but the stronger conditional (5) can support (2'). Is Williamson entitled to accept (5)? We can approach this question by looking at what Williamson says more generally about the connection between reliability and knowledge. In his discussion of the role of reliability in the anti-luminosity argument, Williamson proposes:

(11) If one believes $p$ truly in case $a$, one must avoid false belief in other cases sufficiently similar to $a$ in order to count as reliable enough to know $p$ in $a$. (100)

This principle is very close to what Williamson subsequently refers to as the safety requirement on knowing. Given that one's knowing $p$ entails one's having a true belief reliable enough for knowing $p$, (11) yields the following constraint on knowing:

(12) If one knows $p$ in case $a$, then in every case $b$ sufficiently similar to $a$, if one believes $p$, then $p$ is true in $b$.

To keep our terminology consistent, we can rewrite (12) as

(12') If one knows in case $a$ that C obtains, then in every sufficiently similar case $b$, if one believes in $b$ that C obtains, then C obtains in $b$.

If this is Williamson's most general statement of the connection between reliability and knowledge, then it should license any more specific claims about that connection. On the assumption that a case where one knows C obtains is sufficiently similar to a case where one

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8 Williamson later expresses the safety condition in this way: "If one knows, one could not easily have been wrong in a similar case." (147) This principle is weaker than (11) since it contains the further restriction that the similar case be such that one could easily be in it. Given that (11) is the stronger of the two, there is no harm in using it in Williamson's argument.

9 The same issue that I discussed in note 2 arises here: If one's having a true belief reliable enough for knowing C obtains does not entail that one knows C obtains, then (12) yields a slightly stronger reliability constraint. But again, the difference in strength will not affect the argument.

10 Thanks to Nico Silins for pointing out an error in an earlier formulation.
believes C obtains at a slightly later time, on a very similar basis, to a slightly lesser degree, (12') entails the weaker conditional (4).

But we have seen that only the stronger conditional (5) entails (2'). And deriving (5) from (12') will face the same difficulty as deriving (2') from (4). To derive (5) we need the conjunction of (12') and

\[(13) \text{ If at a very slightly later time one has a very slightly lower degree of belief that C obtains, then at that slightly later time one believes C obtains.}\]

And the argument for (13) would involve the same kind of sorites reasoning we saw in the argument for (8).

Let us take stock. We began by asking what justification there is for (2') in the argument for (1). Williamson tells us that the intuitive basis for (2') lies in (3). But (3) admits of a weak and a strong interpretation expressed in (4) and (5) respectively. And while (5) supports (2'), we cannot get from (4) to (2') without relying on sorites reasoning. Thus Williamson needs to rely on the stronger conditional (5). But Williamson’s most general statement of the connection between reliability and knowledge, the safety condition (12'), supports only (4). We cannot get from (12') to (5) without engaging in sorites reasoning. So there is no route from the safety condition (12') to the crucial premise (2') that does not involve sorites reasoning. While it is the strong conditional (5) that yields (2'), it is the weak conditional (4) that is supported by the safety condition. Should we conclude that the argument for (2'), and so the argument for (1), fail?\[11\]

Perhaps it is a mistake to view the argument for (2') as deriving from the safety condition. Recall that (3) is supposed to be the intuitive basis behind the reasoning for (1), and thus for (2'). In connection with (3) Williamson says the following:

The use of the concept *is reliable* here is a way of drawing attention to an aspect of the case relevant to the application of the concept *knows*, ... The aim is not to establish a universal generalization but to construct a counterexample to one, the

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\[11\] I am indebted to Tom Blackson for raising the question of how precisely reliability considerations motivate (1). Blackson has noted that because Williamson allows that one can go from believing at \(t_i\) to not believing at \(t_{i+1}\), he cannot use the safety condition in support of the argument for (1). See his “On Williamson’s Argument for I,” in his Anti-luminosity Argument, *Philosophy and Phenomenological Research*, forthcoming. My point here is that even if Williamson had not committed himself on the question of whether one can go from believing at \(t_i\) to not believing at \(t_{i+1}\), the only reasoning that will allow Williamson to get from the safety condition to (1) is sorites reasoning.
luminosity principle (L). As with counterexamples to proposed analyses of concepts, we are not required to derive our judgment as to whether the concept applies in a particular case from general principles. \(101\)

I take Williamson's point to be that our judgment that (3) is correct represents a particular claim about a particular kind of case. We make that judgment as part of an argument for constructing a counterexample to (L). And we are not required to derive that judgment from a more general principle like (12').

Of course this leaves it open whether in accepting (3) we are accepting the weaker (4) or the stronger (5). As we have seen, (5) is what Williamson needs to derive (2'). If we grant Williamson that he does not have to derive (5) from a more general principle, then the failure of the safety condition (12') to support (5), does not prevent (5) from providing the basis for (2').

On this way of viewing matters, there is more to the reliability constraint on knowing than the safety condition. Williamson must accept either that some other more general reliability constraint that yields (5), or that (5) itself expresses the most general formulation of this particular constraint.

Is (5) a plausible constraint on knowing? Once (5) is distinguished from (4), this is not so clear. Moreover (5) trivially entails

\[(14) \text{ If one knows that a condition } C \text{ obtains and if at a very slightly later time one has, on a very similar basis, a very slightly lower degree of belief that } C \text{ obtains, and one does not believe that } C \text{ obtains, then } C \text{ obtains at that later time.} \]

So to defend (5), Williamson must defend (14). One way to do this would be to deny that the antecedent of (14) is possible. But this would require him to rely on the sorites premise (10).\(^{13}\) In view of this, he cannot deny

\[(15) \text{ Possibly, one knows one feels cold at } t_i \text{ and at } t_{i+1} \text{ one has, on a very similar basis, a very slightly lower degree of belief that one feels cold, and at } t_{i+1} \text{ one does not believe one feels cold.} \]

\(^{12}\) Recall that I am treating (5) as a material conditional.

\(^{13}\) Of course Williamson's own view is that there will be a sharp but unknowable boundary between believing and not believing.

\(^{14}\) Here I assume again that one can know \(P\) even though one's degree of belief in \(P\) is just above the threshold for belief *simpliciter.*
Thus, Williamson must defend (14) as expressing a substantive reliability constraint on knowledge. As we have seen, Williamson in fact does defend (14). His defense proceeds from the observation that one's confidence at \( t_i \) is only slightly less than one's confidence at \( t_{i+1} \). So if at \( t_{i+1} \) C does not obtain, then "... what constituted [one's] belief at \( t_i \) was largely misplaced confidence ... One's confidence at \( t_i \) was reliably based in the way required for knowledge only if one feels cold at \( t_{i+1} \)" (97).

Williamson's appeal to reliability considerations in defense of (14) is puzzling. At \( t_i \) one no longer believes that C obtains. So even if C does not obtain, one will not have a false belief. Moreover, if C does obtain, one will fail to detect a truth. To put it metaphorically, if at \( t_{i+1} \) C does not obtain, one's doxastic state at \( t_{i+1} \) is better tuned to one's condition—one does not feel cold and one does not believe one feels cold.

Perhaps there are reliability constraints on degrees of confidence that are independent of considerations about whether one has false beliefs or fails to have true beliefs.15 Williamson argues that if at \( t_{i+1} \) C does not obtain, then one's confidence at \( t_i \) was largely misplaced. And it is misplaced because "... one's confidence at \( t_i \) is only slightly less than one's confidence at \( t_{i+1} \)." But it is not obvious why one's confidence at \( t_i \) is misplaced. We are supposing that at \( t_i \) one knows one feels cold. Thus at \( t_i \) one feels cold and one believes one feels cold. It follows that if at \( t_{i+1} \) one no longer believes one feels cold, then at \( t_i \) one just barely believes one feels cold. Now suppose one no longer feels cold at \( t_{i+1} \). Then one just barely feels cold at \( t_i \). So under these suppositions, at \( t_i \) one just barely feels cold and one just barely believes one feels cold. So how is one's confidence at \( t_i \) misplaced? Clearly one should not have more confidence at \( t_i \). And to say one should have less confidence is to say that at \( t_i \) one should not believe one feels cold. But given that by stipulation, one does feel cold at \( t_i \), that is just to say that at \( t_i \) one's level of confidence should be such that luminosity fails. And that would be question-begging in this context.

I am not claiming that (5) is false. I find the issues concerning the status of (5) to be obscure. But I do think that (5) is questionable enough that the defender of (L) can reasonably reject it as a premise in an argument for the denial of (L). This is especially true given that on the fairly weak assumption that (15) is true (which is just the assumption that the sorities premise is false), there is a trivial argument from (5) to the denial of (L): We have noted that (5) trivially entails (14). But (14) and (15) trivially entail

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15 Thanks to Scott Sturgeon for helping me see this.
Possibly, at \( t_{i+1} \), one feels cold and one does not believe one feels cold.

Given that knowledge entails belief, it follows that it is possible that one feels cold and one does not know one feels cold. And given Williamson’s stipulation that one is continuously considering whether one feels cold, it follows that there is a case where one feels cold but one is not in a position to know that one feels cold. That is to say, it follows that the condition that one feels cold is not luminous.

Because (5) is both questionable and very close to the denial of (L), I conclude that it is not well-suited to serve as a premise in an argument against (L). If this is correct, then Williamson’s argument against luminosity fails.

Perhaps the anti-luminosity argument can be reconstructed in more favorable terms. The crucial premise in Williamson’s argument is

(1) If in \( a_i \) one knows one feels cold, then in \( a_{i+1} \) one feels cold.

According to Williamson, the intuitive basis for (1) is the reliability constraint on knowledge expressed in (3). I have argued that an appeal to a safety principle (itself a reliability constraint on knowledge) will not help the derivation of (1), if that derivation proceeds through (3). But perhaps the anti-luminosity argument can be made by deriving (1) directly from safety, without any appeal to (3).

Later in the book, Williamson provides a compact statement of the safety constraint on knowledge:

(17) If one knows, one could not easily have been wrong in a similar case.

Now suppose we appeal further to the empirical premise

(18) One cannot discriminate between adjacent cases in the series \( a_1, a_2, \ldots, a_n \), i.e., when \( a_i \) is the case, one does not know that \( a_{i+1} \) is not the case, (nor that \( a_{i+1} \) is not the case).

along with the premise

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16 Versions of this argument were suggested to me by John Hawthorne, Nico Silins, and Jonathan Vogel.

(19) Adjacent cases in the series are similar in the way required by (17).

These three premises are sufficient to derive (1). From (18) and (19) and the description of the case, it follows that when in $a_t$ one feels cold, one could have easily believed one feels cold in the similar case $a_{t+1}$. Then by (17), it follows that if one knows one feels cold in $a_t$, then in $a_{t+1}$ one feels cold, i.e., it follows that (1) is true.

This version of the luminosity argument avoids the objections I raised to the original argument. Those objections were aimed at the derivation of (1) from (3), not on the derivation of (1) directly from safety. This new version of the argument differs from the original in two crucial respects. While (17) is a modal principle, (3) is not. And unlike Williamson's original argument, this new argument appeals to the empirical premise (18). Williamson does say in the introduction to the book that "The main idea behind the argument against luminosity is that our powers of discrimination are limited". And when he sets up the argument, he stipulates that in the transition between adjacent cases, one is not aware of any change in one's feelings of heat or cold. This is essentially the empirical premise (18). But as the argument develops, this premise does not play any role in the derivation of (1) from (3). That derivation requires only the premise:

(20) If in $a_t$ one believes one feels cold, then in $a_{t+1}$ one believes one feels cold on a very similar basis to a very slightly lower degree.

But (20) could be true even if (18) were false.

These differences turn out to be crucial. The original argument runs into trouble because the specification of the case does not rule out the possibility that at $t_{i+1}$ one does not believe one feels cold. Thus even if at $t_{i+1}$ one does not feel cold, one is not thereby mistaken. This means that as far as (3) is concerned, the reliability of one's belief at $a_t$ that one feels cold is not (clearly) impugned. But even if at $t_{i+1}$ one does not believe one feels cold, the empirical premise (18) ensures that at $t_i$ one could easily have believed one feels cold. This fact combines with the modal safety principle (17) to yield (1) (given the similarity of adjacent cases).

Is this new version of the argument successful? Recall Williamson's earlier formulation of the safety condition:

(11) If one believes $p$ truly in case $a$, one must avoid false belief in other cases sufficiently similar to $a$ in order to count as reliable enough to know $p$ in $a$. (100)
He goes on to say

The vagueness in ‘sufficiently similar’ matches the vagueness in ‘reliable’ and in ‘know’. Since the account of knowledge developed in Chapter 1 implies that the reliability condition will not be a conjunct in a non-circular analysis of the concept knows, we need not even assume that we can specify the relevant degree and kind of similarity without using the concept knows.

(100)

Williamson’s point is that our similarity judgments that ground our reliability judgments may themselves be epistemic. This means that our acceptance of (19) may depend on judgments about when one knows. So our judgment that $a_{i+1}$ is similar to $a_i$ may require the judgment that if one could wrongly believe one feels cold in $a_{i+1}$, then in $a_i$ one does not know one feels cold. Given (18), this requires the judgment that in $a_i$ one knows one feels cold only if in $a_{i+1}$ one feels cold. And this is just the judgment that (1) is true. In that case, the new argument turns out to be circular.\(^{18}\)

Can the argument succeed if we suppose, pace Williamson, that we can apply safety by making similarity judgments independently of making epistemic judgments? One might suppose that adjacent cases in the series are sufficiently similar by any reasonable similarity metric.\(^{19}\) This supposition would avoid the circularity problem. But it also allows us to subject the safety principle (17) to more rigorous scrutiny. On Williamson’s view, that similarity judgments cannot be made independently of judgments about knowledge, it is pointless to try to construct counterexamples to safety. Such an example would require that one knows in case $W$, even though one could easily have been wrong in a similar case $W'$. But if our similarity judgments are epistemic, the possibility remains that our judgment that one knows in $W$, shows that $W'$ is not sufficiently similar. Of course this does not mean that the safety principle does not have explanatory value. It only means that we cannot appeal to safety independently of our judgments about knowledge. But if we view safety as an independently assessable criterion of knowledge, then this worry about alleged counterexamples does not arise.

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\(^{18}\) One could argue against luminosity by appealing directly to (1) as a premise. But a defender of luminosity could reject (1) for reasons similar to the reasons that would allow rejection of (5).

\(^{19}\) A further complication stems from Williamson’s claim that the degree of similarity required for purposes of determining whether ‘safety’ applies, depends on the context.(124) Does it follow that ‘knowledge’ judgments are context-sensitive? If so, then luminosity may hold relative to some contexts but not relative to others.
So consider the following case\textsuperscript{20}. Suppose I know what Oak trees look like. Unknown to me, there is a species of tree (call it \textquote{\textsc{T}}) with one remaining individual that looks very much like an Oak tree. I am unable to discriminate between an Oak tree and a \textsc{T} tree. As it turns out, I am in a meadow with an Oak tree and this last remaining \textsc{T} tree. I have yet to look in the direction of the trees, but they are so positioned that the \textsc{T} tree blocks my view of the Oak tree. Just as I look in the direction of the trees, a highly improbable quantum event occurs so the atoms of the \textsc{T} tree disperse widely into the surrounding space. Because of this, I see the Oak tree. Intuitively, since I know what Oak trees look like, I know that I see an Oak tree. But had the atoms of the \textsc{T} tree not dispersed, I would have seen it and falsely believed that I see an Oak tree. That is to say, my belief that I see an Oak tree could have easily been wrong in a similar case.

This case shows that one cannot appeal to safety as an independently assessable criterion of knowledge. I conclude that the attempt to reconstruct the anti-luminosity argument by deriving (1) directly from safety fails.\textsuperscript{21}

\textsuperscript{20} In \textit{\textquote{Unsafe Knowledge}}, \textit{Synthese} 146, 2005, Juan Comesana presents a case with essentially the same structure. He also supplies an illuminating diagnosis of why safety fails in these kinds of cases.

\textsuperscript{21} I thank Tom Blackson, Mark Budolfson, Wayne Davis, Patrick Greenough, John Hawthorne, Scott Sturgeon, Jonathan Vogel, Michael White, and especially Nico Silins, for valuable discussion.