EXPLANATIONISM: DEFENDED ON ALL SIDES

Kevin McCAIN

ABSTRACT: Explanationists about epistemic justification hold that justification depends upon explanatory considerations. After a bit of a lull, there has recently been a resurgence of defenses of such views. Despite the plausibility of these defenses, explanationism still faces challenges. Recently, T. Ryan Byerly and Kraig Martin have argued that explanationist views fail to provide either necessary or sufficient conditions for epistemic justification. I argue that Byerly and Martin are mistaken on both accounts.

KEYWORDS: evidentialism, explanationism, explanationist evidentialism, justification

Explanationists about epistemic justification hold that justification depends upon explanatory considerations. In fact, explanationists agree with Earl Conee and Richard Feldman's claim that "fundamental epistemic principles are principles of best explanation."[1] After a bit of a lull, there has recently been a resurgence of defenses of such views.[2] Despite the plausibility of some of these defenses, explanationist views still face challenges. Several authors have argued that explanationism fails to provide a necessary condition for justification. Keith Lehrer and Alvin Goldman have both argued that explanationism fails to account for our justification in cases of beliefs formed by simple deductive and arithmetical inferences.[3] T. Ryan Byerly has argued that explanationism cannot account for the

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[1] Earl Conee and Richard Feldman, "Evidence," in *Epistemology: New Essays*, ed. Quentin Smith (Oxford: Oxford University Press, 2008), 97.

[2] For example, Conee and Feldman, "Evidence," Kevin McCain, "Explanationist Evidentialism," *Episteme* 10 (2013): 299-315, Kevin McCain, *Evidentialism and Epistemic Justification* (New York: Routledge, 2014), Kevin McCain, "Evidentialism, Explanationism, and Beliefs about the Future," *Erkenntnis* 79 (2014): 99-109, and Ted Poston, *Reason & Explanation: A Defense of Explanatory Coherentism* (New York: Palgrave-MacMillan, 2014) have each recently defended versions of explanationism. Prior to these recent developments explanationism has not been close to center stage since the late 1980s when Gilbert Harman, *Change in View* (Cambridge, MA: MIT Press, 1986) (expanding on Gilbert Harman, *Thought.* (Princeton: Princeton University Press, 1973)), William Lycan, *Judgement and Justification* (Cambridge: Cambridge University Press, 1988), and Paul Moser, *Knowledge and Evidence* (Cambridge: Cambridge University Press, 1989) defended explanationist theories.

[3] Keith Lehrer, *Knowledge* (Oxford: Oxford University Press, 1974) and Alvin Goldman, "Toward a Synthesis of Reliabilism and Evidentialism? Or: Evidentialism's Troubles,

justification of a particular class of inductive beliefs – those pertaining to the future.[4]

I have attempted to respond to both of these difficulties with my *Explanationist Evidentialism*. In particular, Explanationist Evidentialism includes the following account of propositional justification:

> Ex-EJ
>
> > A person, S, with evidence e at t is justified in believing p at t iff at t S has considered p and:
> >
> > either (i) p is part of the best explanation available to S at t for why S has e, or
> >
> > (ii) p is available to S as a logical consequence of the best explanation available to S at t for why S has e.[5]

In essence, I responded to the difficulties raised by Lehrer and Goldman by conceding the points that they make – that strict explanationism cannot account for the justification of these beliefs – and incorporating logical consequence into the account of propositional justification ((ii) in the above principle).[6] I then made use of both explanation and logical consequence when responding to Byerly's objection.

Reliabilism's Rescue Package," in *Evidentialism and Its Discontents*, ed. Trent Dougherty (New York: Oxford University Press, 2011), 254-80.

[4] T. Ryan Byerly, "Explanationism and Justified Beliefs about the Future," *Erkenntnis* 78 (2013): 229-43.

[5] This is essentially the formulation that I defend in "Explanationist Evidentialism", *Evidentialism*, and "Beliefs about the Future." In "Beliefs about the Future" my defense of this sort of principle is somewhat tentative, but I explicitly endorse the principle, and formulate it more carefully, in "Explanationist Evidentialism" and *Evidentialism*. The primary difference between "Explanationist Evidentialism" and *Evidentialism* concerning this account of propositional justification is that in the earlier work, "Explanationist Evidentialism," I refer to this account as "Explanationist Evidentialism." However, in the later work Explanationist Evidentialism is put forward as a complete evidentialist account of justification – one that accounts for both propositional and doxastic justification. So, what I call "Explanationist Evidentialism" in the earlier work is essentially the component of Explanationist Evidentialism that I call "*Ex-EJ*" – the component that provides an account of propositional justification – in *Evidentialism*.

[6] Of course, this is a concession *only if* relations of logical consequence are not themselves explanatory relations. See Gilbert Harman, *Thought*, for reasons to think that relations of logical consequence are in fact explanatory, and see Wesley Salmon, *Four Decades of Scientific Explanation* (Minneapolis: University of Minnesota Press, 1989) for reasons to deny this.

Recently, Byerly and Kraig Martin have moved the debate over the acceptability of explanationism forward in important ways.[7] First, B&M argue that while *Ex-EJ* seems to succeed as a response to the objections of Lehrer and Goldman, it fails to adequately respond to Byerly's objection.[8] So, they contend that *Ex-EJ*, and explanationism more generally, fails to give a necessary condition for justification. Second, in addition to critiquing my earlier responses to Byerly, B&M also present a new objection that is designed to show that explanationist views fail to provide a sufficient condition for justification. The upshot of B&M's discussion is that, as they say, "explanationist views face problems on both sides."[9]

Here I argue that explanationism has the resources to adequately respond to both of B&M's attacks. More specifically, in the section that immediately follows (section 1) I briefly discuss B&M's argument for why my *Ex-EJ* fails to adequately address Byerly's concern about beliefs about the future. I grant B&M that they *may* be correct on this point; however, I argue that there is a modification of my view that can yield the appropriate results when it comes to beliefs about the future. Importantly, the modification I propose is independently motivated by consideration of the explanationist insights that I was attempting to capture with *Ex-EJ*. Further, not only does this modification provide a satisfying response to Byerly's objection, it continues to yield convincing responses to the objections of Lehrer and Goldman concerning deductive and arithmetical inferences. Thus, this modification in response to B&M marks a significant improvement in the formulation of explanationism. In the final section (section 2) I explore B&M's argument for thinking that explanationism fails to provide a sufficient condition for justification. I argue that, while interesting, B&M's case against explanationism is mistaken, a fact that can be seen by recognizing a subtle point about the commitments of explanationist views.

1. The Challenge to the Necessity Condition of Explanationism

1.1 My Original Response to Byerly's Case

In order understand B&M's argument for thinking that *Ex-EJ* fails to provide a necessary condition for justification it is important to first consider the case that underlies their argument. Here is the case of beliefs about the future that Byerly originally presents:

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[7] T. Ryan Byerly and Kraig Martin, "Problems for Explanationism on Both Sides," *Erkenntnis* 80 (2015): 773-91. Hereafter I will refer to Byerly and Martin in the text as "B&M."
[8] Byerly, "Explanationism."
[9] Byerly and Martin, "Problems for Explanationism," 790.

> Suppose I'm on the golf course on a sunny, calm day. My putting stroke has been working for me most of the day, and I'm now on the sixteenth green. It's not a long putt – just six feet. I'm fairly confident. I rotate my shoulders, pulling the putter back, and then accelerate through the ball. It rolls toward the cup. The speed looks good. The line looks on. Yes, I believe it's going in![10]

Byerly claims that it "is implausible" to think that <the golf ball will roll into the cup> is part of the best explanation of his evidence because "[s]urely the ball's rolling into the cup at some later time doesn't explain why right now I have the evidence that I do."[11] According to Byerly, the explanation for the evidence he has at this point "is a body of current and perhaps past propositions" – "little, if any, future facts enter into the best explanation for my current experience."[12] In light of this, Byerly argues that explanationist views face a serious problem because <the golf ball will roll into the cup> is justified for him, but it does not seem to be part of the best explanation of his evidence.

As B&M note, in my earlier works I offered three sorts of responses to Byerly's case, which they helpfully term the "*epistemic probability strategy*, the *normal case strategy*, and the *near neighborhood strategy*."[13] Importantly, each of these strategies grants that Byerly is correct that (i) of *Ex-EJ* is not satisfied in his case. However, I attempted to show that (ii) of *Ex-EJ* is satisfied in Byerly's case by describing how it could be so given each of the three strategies. Rather than discuss all three of these strategies, I will simply discuss the *epistemic probability strategy* and the problem that B&M expose for it. The reason I do this is threefold. First, the problem that B&M raise for the *epistemic probability strategy* is one that they argue is equally a problem for the *near neighborhood strategy*. Second, as noted earlier I think that B&M make a fairly good case for thinking that *Ex-EJ* may have problems here. So, although the problem they raise for the *normal case strategy* is different, and so this strategy may not be as problematic as they suggest, I am willing to grant for the sake of argument that B&M's objections to all three strategies are effective. Third, by considering the problem that B&M propose for the *epistemic probability strategy* the motivation for the sort of modification of *Ex-EJ* that I suggest becomes clearer.

As the name suggests, the *epistemic probability strategy* involves appealing to a particular view of epistemic probability. Namely, it utilizes the view of epistemic probability held by some philosophers where *p* is epistemically probable

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[10] Byerly, "Explanationism," 235.
[11] Byerly, "Explanationism," 235.
[12] Byerly, "Explanationism," 236.
[13] Byerly and Martin, "Problems for Explanationism," 778.

for S just means that S's evidence on balance supports believing that *p*.[14] Here is how I presented this response to Byerly's case (where "circumstances C" are the circumstances that Byerly is currently observing in his original case):

> It is plausible that in this sort of case both <most golf balls rolling toward a cup in circumstances C go into the cup> and <the golf ball is rolling toward a cup in circumstances C> are part of the best available explanation of Byerly's evidence. It is not unreasonable to think that because of this the best available explanation of Byerly's evidence entails that the golf ball will probably (more likely than not) go into the cup. That is, it is reasonable to think that the best explanation of Byerly's evidence entails that it is epistemically probable that the golf ball will go into the cup … the fact that Byerly's evidence entails <the golf ball will probably go into the cup> means that his evidence entails <Byerly's evidence on balance supports <the golf ball will go into the cup.>> Presumably, if S's evidence on balance supports believing that her evidence on balance supports believing that *p*, then her evidence on balance supports believing that *p*. Thus, if one understands epistemic probability to be the same as epistemic support, then it is plausible that in this case Byerly's evidence supports <the golf ball will go into the cup.>[15]

I assumed that the other conditions laid out in Explanationist Evidentialism are also satisfied in Byerly's case. Since I argued that (ii) of *Ex-EJ* is satisfied in this case, I claimed that my explanationist theory yields the intuitively correct result that Byerly is justified in believing that the <the golf ball will go into the cup.>

1.2 B&M's Attack on My Original Response

As noted above, B&M argue that all three strategies that I employed in responding to Byerly's case are problematic. For the present purpose, however, it will be sufficient to examine only their response to the *epistemic probability strategy*. The problem that B&M raise for this strategy is straightforward. As they point out, "generally, a conjunction of propositions of the form <Most Fs are Gs> and <x is an F> does not entail <probably x is a G.> This is because x might be a member of some other category, H, such that most members of H are not Gs."[16] In order to illustrate this B&M offer the following:

> Sally is a woman over 35. Suppose most women over 35 are unable to run a 6-min mile. Do these claims *entail* that it is probable that Sally is unable to run a 6-min mile? They do not … suppose in addition to being a woman over 35, Sally is

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[14] See Roderick Chisholm, "The Status of Epistemic Principles," *Nous* 24 (1990): 209–15 and Earl Conee and Richard Feldman, "Evidentialism," *Philosophical Studies* 48 (1985): 15–34.

[15] McCain, *Evidentialism*, 145.

[16] Byerly and Martin, "Problems for Explanationism," 778.

> a world-class Olympic runner, and that almost all world-class Olympic runners are able to run 6-min miles. If anything, then, it is likely that she *can* run a 6-min mile.[17]

The problem here arises from the monotonicity of logical entailment – if *p* logically entails *q*, then *p*&*r* entail *q* as well. In light of this fact, B&M argue that the *epistemic probability strategy* fails. The problem, they claim, is that <the golf ball will probably go into the cup> is not entailed by the conjunction of <most golf balls rolling toward a cup in circumstances C go into the cup> and <the golf ball is rolling toward a cup in circumstances C.> So, B&M argue that the *epistemic probability strategy* fails to provide a satisfactory response to Byerly's case on behalf of *Ex-EJ*.

While there are ways that I could respond to this sort of objection without abandoning *Ex-EJ*, I think that B&M provide at least prima facie grounds for doubting that (ii) of *Ex-EJ* provides explanationists with a way of handling Byerly's golf case.

1.3 Upgrading Ex-EJ

B&M's argument provides grounds for thinking that *Ex-EJ* is in need of revision. Importantly, there are also independent grounds for thinking that *Ex-EJ* would be improved by the sort of revision that I will elucidate in this section. These independent grounds arise from the fact that *Ex-EJ* seems to sacrifice some of its explanationist essence in an attempt to respond to cases like Byerly's, Goldman's, and Lehrer's. Specifically, by adding an appeal to logical consequence *Ex-EJ* is more complex than it would be if it only appealed to explanatory relations. Explanationists accept that, all other things being equal, a simpler theory is better than a more complex one. So, if *Ex-EJ* could be made to work without building in an appeal to logical consequence it would be better because it would be simpler. Additionally, including something beyond explanatory considerations runs counter to the idea that the only fundamental epistemic principles are principles of best explanation. This understanding of epistemic principles is something that I, and other explanationists, go to some lengths to motivate. So, if the arguments of B&M were not enough (though they may be), there are additional reasons to think that *Ex-EJ* could use some revision.

Fortunately, *Ex-EJ* can be modified so that it provides a satisfactory response to Byerly's case, a response that does not fall prey to B&M's objections. What is more *Ex-EJ* can be so modified while retaining its fundamental

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[17] Byerly and Martin, "Problems for Explanationism," 778.

explanationist nature and still providing intuitively correct responses to Goldman and Lehrer's cases.

Here is a modified version of *Ex-EJ*:

Ex-EJ 2.0

> A person, S, with evidence e at t is justified in believing p at t iff at t S has considered p and:
> either (i) p is part of the best explanation available to S at t for why S has e, or
> (ii) p is available to S as an explanatory consequence of the best explanation available to S at t for why S has e.

It is worth very briefly explicating a couple points about *Ex-EJ 2.0* before continuing. First, it should be noted that the first disjunct of the right-hand of *Ex-EJ 2.0* is identical to the first disjunct of the original *Ex-EJ*. Second, by saying that *p* is "an explanatory consequence of the best explanation available to S at *t*" I mean that *p* would be better explained by the best explanation of S's evidence available to S at *t* than ~*p* would. In other words, if *p* were true, the best available explanation of S's evidence would better explain its truth than it would the truth of ~*p*, if ~*p* were true.[18,19]

In the next section it will be made clear how this modified account provides the intuitively correct result in Byerly's case, and in the section after that how it provides the intuitively correct results in Goldman's and Lehrer's cases as well.

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[18] This approach is influenced by earlier explanationist views such as Harman, *Thought*, where *p* is justified when it explains or is explained by one's evidence. Notably, the approach here does not say that *p* is justified when it is explained by one's evidence though. Rather, *Ex-EJ 2.0* holds that *p* is justified when it best explains S's evidence or it would be explained by the best explanation of S's evidence. The difference between *Ex-EJ 2.0* and earlier explanationist views is subtle, but important.

[19] There are important qualifications of *Ex-EJ 2.0* that bear noting. In order for S to be justified in believing that *p* it must not only be the best available explanation of S's evidence, it must also be a *sufficiently good* explanation of S's evidence. Similarly, in order for S to be justified in believing an explanatory consequence, *p*, of the best available explanation of her evidence it has to be that the best available explanation of her evidence would explain *p* *significantly better* than it would ~*p*. Admittedly, it may be difficult to precisely spell out what is required for an explanation to be sufficiently good or for *p* to be explained significantly better than ~*p*. However, for present purposes it is not necessary to make these qualifications of *Ex-EJ 2.0* precise. Instead, it can simply be assumed that these conditions are met in the discussion that follows.

1.4 Ex-EJ 2.0 and Byerly's Case

The case of beliefs about the future that Byerly presents is a special instance of inductive belief. So, I will first explain how *Ex-EJ 2.0* handles the justification of inductive beliefs. A simple case of justified inductive inference is one in which S has made many varied observations of Fs and they have all been G. Plausibly, in such a case part of the best explanation available to S for her observational evidence is that <all Fs are G.>[20] In such a case it is intuitive to think that S is justified in believing that the next observed F will be G (assuming, of course, that S has reason to think that there will be a next observed F). *Ex-EJ 2.0* yields this result. <The next observed F will be G> is better explained by the best explanation of S's evidence than <the next observed F will not be G.> After all, <all Fs are G> provides a very good explanation of the first proposition, but no explanation at all of the second.

A more complex case of inductive inference arises when S has made many varied observations of Fs and most, but not all, have been G. In such a case <all Fs are G> is not part of the best available explanation of S's evidence. Instead, something like <most Fs are G> (or perhaps something more particular like <n% of Fs are G,> where "n%" is greater than 50%) is part of the best available explanation of S's evidence. Often in such cases, at least those where n% is significantly higher than 50%, we still think that S would be justified in believing <the next observed F will be G>, just not as justified as she would be had all observed Fs been G.

Again, *Ex-EJ 2.0* yields the intuitive result. In a case where most observed Fs have been G, S is justified in believing <the next observed F will be G> because the best explanation of her evidence, which includes <most Fs are G>, better explains that proposition than its denial. The reason for this is that large probabilities explain better than smaller ones. That is to say, if we are considering two hypotheses and, for example, one says that the probability of A occurring is X and the other says that the probability of A occurring is <X, although both hypotheses might offer potential explanations of A's occurrence, all other things

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[20] Whether this regularity is a natural law or some other perhaps contingent regularity does not matter for the present purpose. Further, it is worth mentioning that when we are explaining why all observed Fs are G, as Roger White, "Explanation as a Guide to Induction," *Philosopher's Imprint* 5 (2005), accessed September 29, 2014, *www.philosophersimprint.org/005002/*, says "the properties of unobserved things is crucial" because "if the unobserved Fs are G, then it is to be expected that we only observe Fs which are G."

being equal the first hypothesis is a better explanation of A.[21] Likewise, if a particular hypothesis says that the probability of A occurring is X and the probability of B occurring is <X, then, all other things being equal, the hypothesis provides a better explanation of A than it does of B. When we say, "most Fs are G" we are saying that the probability of observing a F that is a G is X (in this case X > .5) and the probability of observing a F that is not a G is <X. So, <most Fs are G> would better explain <the next observed F will be G> than it would explain <the next observed F will not be G> because it offers a higher probability explanation of the first proposition than it does for the second. Thus, *Ex-EJ 2.0* coupled with the widely accepted claim that large probabilities explain better than smaller ones yields the intuitive results in these sorts of cases of inductive inference.

It should now be fairly clear how *Ex-EJ 2.0* leads to the correct result in Byerly's case. The fact that <the golf ball will roll into the cup> is a proposition about the future poses no special challenge for *Ex-EJ 2.0*; Byerly's case is simply a case in which most observed Fs have been G – most golf balls in this sort of situation have gone into the cup. So, in Byerly's case it is reasonable to think that part of the best explanation of his evidence is <most golf balls in these circumstances roll into the cup>.[22] As a result the best explanation of Byerly's evidence would better explain the event of the golf ball that Byerly is currently observing going into the cup than it would the event of the golf ball not going into the cup because it offers a higher probability explanation of the former than of the latter event. Thus, *Ex-EJ 2.0* yields the result that <the golf ball will roll into the cup> is justified for Byerly because the truth of this proposition would be better explained by the best available explanation of Byerly's evidence than its denial would be.[23]

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[21] For further articulation and defense of why large probabilities explain better than smaller ones see Michael Strevens, "Do Large Probabilities Explain Better?" *Philosophy of Science* 67 (2000): 366-90. Also, see Jonah Schupbach and Jan Sprenger, "The Logic of Explanatory Power," *Philosophy of Science* 78 (2011): 105-27 for defense of an account of explanatory power on which higher probabilities offer greater explanatory power.

[22] By "these circumstances" I simply mean the circumstances that Byerly is currently observing in his case.

[23] It should not be too surprising that explanationism can adequately respond to the sort of case that Byerly describes. After all, inference to the best explanation is commonly appealed to in the sciences to justify claims about unobservables as well as to justify the acceptance of statements of natural laws. Importantly, the natural laws that are justified by inference to the best explanation make claims about the past, present, and future behavior of the universe.

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1.5 Ex-EJ 2.0 and Logical Entailment

Before concluding that *Ex-EJ* should be replaced with *Ex-EJ 2.0* it is important to establish that *Ex-EJ 2.0* can yield the appropriate results in the other sort of cases that prompted the inclusion of logical consequence in *Ex-EJ*. Although the cases presented by Keith Lehrer and Alvin Goldman are similar, it is worth briefly considering both. To begin, here is the case that Lehrer uses to challenge explanationism:

> Imagine that I am standing with my toe next to a mouse that is three feet from a four-foot-high flagpole with an owl sitting on top. From this information concerning boundary conditions and the Pythagorean Theorem, which we here construe as an empirical law, we can deduce that the mouse is five feet from the owl.[24]

According to Lehrer, this sort of case poses a serious threat to explanationism because while he is "completely justified in his belief that the mouse is five feet from the owl," he "has no explanation of why the mouse is five feet from the owl."[25] Lehrer insists that the justification of his belief about the distance from the mouse to the owl does not depend on "explanatory relations" at all. Instead, he maintains, "it is enough that the man knows the Pythagorean Theorem, the distance to the pole, and the height of the pole, and deduces the conclusion."[26] So, Lehrer claims that explanationism cannot properly account for the justification of his belief in this case.

Initially, one might be inclined to agree with Lehrer about this case. After all, in this case Lehrer does not seem to have any explanation for why the mouse is where it is. He does not have much evidence about this particular mouse or its life history, nor does he have any evidence concerning why this mouse would take such a risk by coming so close to an owl. So, one might be tempted to conclude, as Lehrer would have us do, that in this case Lehrer has a justified belief concerning the distance from the mouse to the owl, but this belief is not justified because of explanatory considerations at all. Concluding this would be a mistake, however.

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[24] Lehrer, *Knowledge*, 166. Lehrer also presents a similar case where he sees a dead man and deduces that the man was sexually conceived. I do not discuss this case here because it is not relevantly different from the case involving the Pythagorean Theorem.

[25] Lehrer, *Knowledge*, 178.

[26] Lehrer, *Knowledge*, 178. As noted above, Lehrer's objection gets no traction at all, if entailment relations are explanatory relations. I will not take a stand on this issue because explanationists do not need to endorse the idea that entailment relations are explanatory in order to respond to Lehrer's objection.

Notice that according to the first clause of *Ex-EJ 2.0*, (i), *p* is justified for S when it is part of the best explanation available to S for why she has the evidence that she does. What is the evidence in Lehrer's case? Presumably, it includes mental states that give him knowledge of various things: the height of the flagpole, the distance the mouse is from the flagpole, the Pythagorean Theorem, and the fact that the owl is on top of the flag pole. Lehrer's evidence also includes his awareness of the truth of <the mouse is five feet from the owl> seeming to follow from the truth of other items of his evidence. Surely, Lehrer has this sort of awareness since he deduces the truth of <the mouse is five feet from the owl> from his other evidence. Plausibly, part of the best explanation available to Lehrer for why it seems that <the mouse is five feet from the owl> follows from his evidence is that <the mouse is five feet from the owl> is in fact true. It is because of this that an explanationist can respond to Lehrer by pointing out that explanatory relations are relevant to his justification for this proposition after all. Lehrer assumes that for explanatory considerations to be relevant to his justification for believing <the mouse is five feet from the owl> he must have an explanation for what led to this mouse being where it is, but this assumption is mistaken. According to an explanationist account like *Ex-EJ 2.0*, the relevant explanatory relations are between a proposition and one's evidence. All that is required for justification is for <the mouse is five feet from the owl> to be part of the best explanation of Lehrer's evidence, which it is. Thus, <the mouse is five feet from the owl> does bear the appropriate explanatory relations to Lehrer's evidence, so there is no problem for *Ex-EJ 2.0,* or explanationist views in general, here.[27]

Goldman's case seems to rely on a similar mistaken assumption. Here is his case:

> I think there are two squirrels on my deck, and I think there are two birds. So I infer that there are (at least) four animals. Presumably, this arithmetic inference is justified. Is it a case of explanatory inference? Surely not. How does there being four animals *explain* there being two squirrels and two birds? It doesn't. Still, here is a justified belief that some epistemic principle must cover. But that principle, in turn, cannot be grounded in terms of best explanation.[28]

Goldman claims two things are true about this case. First, it is clear that in this case that he has justification for thinking that there are (at least) four animals

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[27] See Poston, *Reason & Explanation*, for different considerations for thinking that Lehrer's case is not a problem for explanationists.

[28] Goldman, "Toward a Synthesis," 277-78.

on the deck. Second, Goldman's justification cannot be accounted for in terms of explanatory considerations.

Again, one might be tempted at first glance to agree with Goldman about this case. Certainly, it seems true to claim that there being (at least) four animals on the deck does not explain there being two squirrels and two birds on the deck. So, one might think that this is a case where a proposition is justified for S, but it is not justified because of explanatory considerations.

Yet again, to accept that Goldman has produced a problematic case for explanationism would be a mistake. Goldman assumes that explanationists are committed to claiming that <there are (at least) four animals on the deck> explains <there are two squirrels and two birds on the deck>. However, explanationists are not committed to this at all. Plausibly, in this case Goldman's evidence includes his evidence for believing that there are two squirrels on the deck and there are two birds on the deck. He also has evidence that supports thinking that squirrels and birds are animals as well as an understanding of basic arithmetic (that two animals plus two animals equals four animals, for instance). Further, it is plausible that Goldman's evidence includes his awareness that the truth of <there are (at least) four animals on the deck> follows from there being two squirrels and two birds on the deck. It is because of the fact that Goldman has all this evidence that <there are (at least) four animals on the deck> is justified for him. Explanationists can plausibly maintain that the reason this proposition is justified by Goldman's evidence is that part of the best explanation for why he has awareness of <there are (at least) four animals on the deck> following from his evidence is that this proposition is true. Thus, again there does not seem to be a problem for *Ex-EJ 2.0* or explanationism more generally here. So, *Ex-EJ 2.0* is independently motivated, provides a convincing response to Byerly's golf case, and yields the intuitively correct results in cases of logical entailment and arithmetical inference. The challenge to necessity put forward by B&M seems to be overcome by *Ex-EJ 2.0*. Now it is time to consider B&M's challenge to the sufficiency of explanationism.

2. The Challenge to the Sufficiency Condition of Explanationism

2.1 B&M's Case

B&M attack the sufficiency condition of *Ex-EJ* (and explanationist theories more generally) by presenting a case where they claim a particular proposition is part of the best explanation of the subject's evidence, but intuitively she is not justified in believing that proposition. Before examining the details of B&M's case it is worth noting two points. First, B&M's case is one where (i) of *Ex-EJ* is satisfied. Since

both *Ex-EJ* and *Ex-EJ 2.0* include (i), if their case is successful it poses just as severe a problem for *Ex-EJ 2.0* as it does for *Ex-EJ*. Second, B&M suggest that their objection to the sufficiency condition of *Ex-EJ* is "related to, though importantly different than, the problem of the bad lot for abductive arguments."[29] Although it is a somewhat minor point, I think it is worth emphasizing that B&M mischaracterize their own objection here. The best of a bad lot objection to abductive arguments is the objection that alleges one is not justified in inferring the truth of the hypothesis that best explains one's data because that hypothesis may simply be the best explanation among a set of explanations all of which are bad.[30] In B&M's case, however, they explicitly acknowledge that the explanation under consideration is a very good explanation. As will become apparent once the details of B&M's case are made clear, the sort of objection B&M make is similar to what P. Kyle Stanford terms "the problem of unconceived alternatives," rather than the bad lot objection.[31] Roughly, the problem of unconceived alternatives is an objection to scientific realism that claims we are not justified in accepting our best scientific theories as true even though they best explain our data because we have good reason to think that there are likely alternatives to these theories, which we are yet to think of, that would explain the data equally well (or better). While this is a minor point it is worth emphasizing because characterizing their objection as related to the bad lot objection, rather than the problem of unconceived alternatives, may lead some to mistakenly think that responses that are effective against the bad lot objection would be effective against B&M's objection to explanationism. Likewise, recognizing the similarity between B&M's objection and the problem of unconceived alternatives may allow advances in responding to one problem to shed light on the other.

It is worth quoting B&M's case in its entirety so that it is completely clear:

> Imagine that Sally is the lead detective on an investigation of a burglary. She typically uses an eight-step investigative procedure for crimes of this sort and this procedure involves gathering and analyzing multiple kinds of evidence – physical evidences, forensic evidences, testimonial evidences, psychological evidences, circumstantial evidences, and so on. Sally is now mid-way through her investigative procedure, having completed four of the eight steps. She has gathered and analyzed the appropriate evidence for these four steps, but has not yet gathered or analyzed evidence that may or may not arise during the final four steps. The list of suspects with which Sally began has been narrowed, and there is

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[29] Byerly and Martin, "Problems for Explanationism," 782.
[30] See Bas van Fraassen, *Laws and Symmetry* (Oxford: Clarendon Press, 1989).
[31] P. Kyle Stanford, *Exceeding Our Grasp: Science, History, and the Problem of Unconceived Alternatives* (New York: Oxford University Press, 2006).

one very promising suspect in particular named Jeremy. In fact, the claim <Jeremy committed the burglary> (call this the *Jeremy hypothesis*) is the best explanation available to Sally for all of the evidence she currently has obtained through the first four steps. There are multiple witnesses locating someone who fits Jeremy's description at the scene of the crime at the time at which it was committed. Some drug paraphernalia like that which Jeremy commonly uses to feed his drug habit was found at the scene of the crime. Jeremy seems to display a sense of satisfaction or gladness about the robbery. His bank account reflects a deposit shortly after the incident. Other current suspects, while not ruled out, do not fit the evidence Sally currently has anywhere nearly as well as Jeremy does. The Jeremy hypothesis is the best available explanation for the evidence Sally currently has and it is a very good explanation of that evidence.

But Sally isn't justified in believing the Jeremy hypothesis. For, she has good reason to think that there may very well be relevant evidence concerning the burglary that she does not currently have. After all, there have been many times in the past where, after completing step four of her investigation, things took a dramatic swing. It has not at all been uncommon that at these later stages in the process, an alternative suspect emerges who fits the data even better than previous suspects. Thus, while the Jeremy hypothesis is the best available explanation of the evidence Sally currently has, and while it is even a very good explanation of that evidence, Sally is not justified in believing this hypothesis. Believing the Jeremy hypothesis would be premature. The correct explanation for Sally's data may very well not be available at present, and she has good reason to think this.[32]

So, B&M claim that satisfying (i) of Ex-EJ is not sufficient for justification. This is a problem that they believe extends to explanationist theories more generally because their case is allegedly one in which Sally is not justified in believing that the best explanation of her evidence is true – even when that explanation is a very good one.

2.2 Defending a Dismissed Response

B&M consider, and ultimately dismiss, a number of potential responses that explanationists might make to their case. In this section I will argue that one of the responses B&M dismiss in fact provides a convincing response to their objection on behalf of the explanationist. This "total evidence" response is one that B&M acknowledge I suggested to them in correspondence. By showing this response is successful, I will have defended *Ex-EJ 2.0* as well as other explanationist theories from B&M's attack on the sufficiency condition.

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[32] Byerly and Martin, "Problems for Explanationism," 783.

The key insight of the total evidence response is that explanationists claim that in order for a proposition to be justified it is not enough that the proposition is part of the best explanation of a portion of one's evidence, it must be part of the best explanation of one's total evidence.[33] So, in B&M's case the total evidence response involves recognizing that while the Jeremy hypothesis may be the best explanation of *part* of Sally's evidence, it is not part of the best explanation of her *total evidence*. The reason for this is that Sally's total evidence includes "good reason to think that there may very well be relevant evidence concerning the burglary that she does not currently have. After all, there have been many times in the past where, after completing step four of her investigation, things took a dramatic swing. It has not at all been uncommon that at these later stages in the process, an alternative suspect emerges who fits the data even better than previous suspects."[34] Since "It has not at all been uncommon that at these later stages in the process, an alternative suspect emerges who fits the data even better than previous suspects," presumably from Sally's perspective the odds of there being a rival to the Jeremy hypothesis that is as good, or better, of an explanation than the Jeremy hypothesis is at least .5. In light of this, it is plausible that the best explanation of Sally's data (or at least an explanation that is equally as good as the Jeremy hypothesis) is that some currently unconceived hypothesis is correct. So, the explanationist can reasonably maintain that the Jeremy hypothesis fails to satisfy *Ex-EJ 2.0* for Sally because it is not the best explanation of her total evidence (there is a rival that is at least as good).

B&M object to the total evidence response on the grounds that "there is no rival hypothesis to the Jeremy hypothesis ready at hand."[35] Their point is that Sally does not have a hypothesis about a particular suspect that is as good of an explanation of her evidence as the Jeremy hypothesis. They claim that because of this lack of a rival hypothesis that includes a particular suspect the Jeremy hypothesis remains the best explanation of Sally's evidence. They claim this is so despite the fact that Sally "has reason to think that the Jeremy hypothesis may well not be the correct explanation for her current evidence."[36]

The mistake B&M are making here is to assume that the hypothesis that one is justified in believing must be a specific one rather than a general one. Consider a

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[33] This is something that I mention explicitly in several places. See, for example, "Explanationist Evidentialism," 303 and *Evidentialism*, 65. Other explanationists emphasize this as well, e.g. Conee and Feldman, "Evidence" and Poston, *Reason & Explanation*.

[34] Byerly and Martin, "Problems for Explanationism," 783.

[35] Byerly and Martin, "Problems for Explanationism," 785.

[36] Byerly and Martin, "Problems for Explanationism," 785.

simple case. You have been away from your home for an hour. You return to find that your door, which you distinctly remember locking, has been forced open. When you enter the house all of your belongings are gone. In a typical situation of this sort (setting aside strange cases where you have evidence that you may be the subject of some sort of elaborate prank) the best explanation of your evidence is that someone or other robbed you. This is the best explanation even though you do not have a particular suspect in mind. To make this point even clearer add to the case that you notice your neighbor's five-year-old son has been playing in your yard, and he still is. One hypothesis that is available to you is that your neighbor's five-year-old son robbed you. However, given your background evidence concerning what would be required to break open your door, move your belongings, etc. the hypothesis that someone other than the five-year-old stole your belongings is a better explanation than the hypothesis that your neighbor's five-year-old son robbed you. This is so even though you do not have a hypothesis concerning who that other suspect might be.

The lesson here is that explanationism does not require that the best explanation of your *total evidence* be a precise explanation of a particular proper subset of your total evidence – the best explanation can be a general hypothesis. Once we recognize this it is easy to see that while the Jeremy hypothesis may be the best explanation of a proper subset of Sally's evidence, it is not the best explanation of her total evidence. Further, the best explanation of Sally's total evidence does not have to include a precise explanation of the particular subset of her evidence that B&M focus on. Thus, it seems that B&M's case fails to pose a problem for the sufficiency condition of *Ex-EJ 2.0*, or explanationist theories in general.

3. Conclusion

B&M's arguments are successful to some degree – they seem to demonstrate that *Ex-EJ* faces problems. Yet, they do not ultimately succeed in showing that explanationism fails as a theory of epistemic justification. Despite the fact that they are not fully successful, their arguments do push the debate over explanationism forward. The sorts of revisions to *Ex-EJ* that B&M's attack on its necessity condition prompts are important and help to motivate an improved explanationist theory, *Ex-EJ 2.0*. Additionally, while their attack on the sufficiency condition of *Ex-EJ* fails, it does help to reinforce the importance of focusing on an agent's total evidence, and discussion of their attack makes clear the sort of explanations that explanationists are committed to claiming are justified. As is clear from the present discussion, B&M's attacks did put

explanationist views "under fire from two directions at once" and they prompt a reworking of the initially plausible explanationist principle put forward in my earlier work.[37] Nonetheless, as I have shown here, explanationism can be defended on all sides from B&M's attacks in intuitively satisfying ways. Thus, explanationism remains a viable theory of epistemic justification that warrants further investigation.[38]