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Hume, Defeat, and Miracle Reports

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No one believes every miracle report they hear. At least, no one I know. For religious and non-religious alike, it is common to disbelieve testimony to the miraculous; it is also common to dismiss such testimony outright. This chapter investigates the rationality of failing to believe miracle reports. Hume famously argued that it is irrational to believe that a miracle has occurred on the basis of testimony alone. While certain aspects of Hume's argument have received extensive discussion, other features of his argument have been largely overlooked. After offering a reconstruction of Hume's argument, I will argue that epistemic defeat plays a central role in the argument and explore the aptness of as well as some limitations to Hume's reasoning. Section 1.1 is devoted to this task. In section 1.2, I discuss the relevance of the prior likelihood of an event when evaluating the evidential strength that testimony to such an event provides. Section 1.3 explores some ways the argument is altered if we adopt a non-traditional picture of evidence and defeat.

1.1 Hume's Argument

1.1.1 *Evaluation of miracle reports*

To begin, we need a gloss on the notions of 'miracle' and 'miracle report.' I will follow Hume in taking a miracle to be a violation of a law of nature by a divine agent.¹ I will also assume that in general miracles are unlikely events. Miracle reports, as I shall understand them, are reports that have two components as part of their content: that an event has occurred and that the event was a miracle. One could be mistaken about one part of the report without being mistaken about the other. For instance, one might

¹ I am aware that there are difficulties involved in formulating a definition of 'miracle.' As this issue has been discussed at length in the literature, and as I have nothing new to add, I will not enter into the nuances of various conceptions here. Nothing in this chapter depends on any particular definition. For relevant discussion, see Earman (2000), Fogelin (2003), Flew (1961), and Swinburne (1970). Those concerned about Hume's definition of a miracle as a violation of a law of nature may also want to consider Hume's footnote (Hume 1975, *Enquiries into Human Understanding (EHU)*, Sec. X, 90), where he claims that if a feather is raised to the ground with insufficient wind, this counts as a miracle.

report that a formerly deaf man can now hear, and this might be true, but the event may not have been the result of a divine agent (perhaps unknown to the reporter the man underwent ear surgery). Or, suppose a farmer reports an event such as rain in a far off field. And suppose further that the natural conditions were not right for rain; rather, God directly brought about the rain, though the farmer is insensitive to this fact. In the proposed terminology, his report is not a miracle report, even though he reports an event that is in fact miraculous.

Two lines of reasoning are often appealed to in support of dismissing miracle reports. The first proceeds along the lines of asking, ‘what are the chances of that happening?’ The second relies on an expectation that the testifier is either lying or mistaken. Both lines of reasoning play a role in Hume’s argument. In what follows, I outline Hume’s argument. In order to avoid getting caught up in interpretive details, I will not insist that my favored interpretation of Hume’s argument is the only coherent interpretation of the text. Hume is unclear on some points, and this leaves his argument open to multiple readings. Nevertheless, while I think there is some room for variation, certain reconstructions strike me as incorrect. For example, any reading of Hume that takes him to be defining his way to his conclusion (by assuming that miracles are by definition impossible and that it is therefore irrational to believe miracle reports) is a misreading of the text.² Unfortunately, it is common to find such interpretations in the literature.³ A detailed defense of my favored reconstruction of the text is advanced by Robert Fogelin (2003). Alan Hájek (2008) also offers an excellent treatment, in my opinion, though neither consider the reasoning in terms of defeat, as I will here.

Towards the beginning of ‘Of Miracles,’ Hume draws attention to a number of factors we take into account when we evaluate testimony:

We entertain suspicion concerning any matter of fact, when the witnesses contradict each other; when they are but few, or of doubtful character; when they have an interest in what they affirm; when they deliver their testimony with hesitation, or on the contrary, with too violent asseverations. (*EHU*, Sec. X, 89)

This first set of considerations fall into what Fogelin calls the *direct* test. The direct test evaluates the quality of the report. The character of the testifier, the manner of his or her testimony, the number of witnesses, and so on, are all features of the testimony relevant to our assessment of it by the direct test.⁴ (While for the most part Hume’s remarks here could be thought to constitute plausible and rather mundane observations about our general sensitivity to particular bits of testimony, he is not altogether

² As others have noted, if this were Hume’s strategy it is hard to make sense of why Hume even bothers to discuss testimony to the miraculous, and why he sees the need to argue that we ought to reject such testimony.

³ For a few examples, see Broad (1916–17), Colwell (1982), Fogelin (1990), and Johnson (1999).

⁴ One way to explicate the direct test is through ratio of likelihoods. The direct test is a result of comparing the $\text{Pr}(S \text{ testifies that } p \mid p)$ with $\text{Pr}(S \text{ testifies that } p \mid \text{not-}p)$. Thanks to an anonymous referee for this suggestion.

correct in his observations. It is not the case that we are suspicious of any testimony delivered by only one witness—quite often one witness suffices to establish an event.)

The second method of assessment Fogelin aptly calls the *reverse test*. This test considers how likely it is that the reported event occurred (the probability that it occurred apart from the testimony offered for it). A poor score on either test can diminish the evidential force of a particular instance of testimony.⁵

Evaluation of a miracle report will involve looking at both tests. As Hume recommends, we need to ‘weigh’ both kinds of considerations. At the end of part I, Hume indicates that upon hearing a miracle report one ought to consider both types of evaluation:

When anyone tells me, that he saw a dead man restored to life, I immediately consider with myself, whether it be more probable, that this person should either deceive or be deceived, or that the fact, which he relates, should really have happened. (*EHU*, X, 91)

Much of the literature on Hume’s essay concentrates on part I, and often ignores part II entirely.⁶ I will maintain that part II is essential to Hume’s argument. The goal of part I is to establish that in any case of testimony to the miraculous, the reverse test guarantees that the standard for rational belief is high due to the incredibly low prior probability of any miracle. However, in part I, Hume does not claim that the standard cannot be met.⁷ To establish his conclusion, the argument crucially depends on the reasoning in part II.

In part II, Hume evaluates miracle reports according to the direct test and offers various reasons for thinking that this kind of testimony dismally fails the direct test. According to Hume, no past testimony to the miraculous has been of sufficient force to warrant acceptance. No previous testimony to any miracle, he contends, has the qualities required to make the testimony trustworthy—no miracle has been attested to by a sufficient number of men of education, integrity, and reputation, who have a great deal to lose if found out to testify incorrectly.^{8,9} Hume further points to a natural tendency in human nature to readily believe the absurd—a tendency he attributes to the agreeable passions of surprise and wonder. In light of this bad track record, Hume

⁵ Since most events have low prior probability, a poor score on the reverse test will require that the likelihood of the event be abnormally low.

⁶ That part I offers a self-contained argument appears to be the majority view, as Fogelin (2003) notes. In this regard, my reading is at odds with the mainstream interpretation.

⁷ This might be a tempting interpretation given Hume’s characterization of the situation as one in which we weigh ‘proof’ against ‘proof’. As Hume indicates, a case of proof against proof does not always end in a stalemate. One side can prove stronger than the other, as he states plainly. For this reason, it strikes me as misguided to think that Hume takes a ‘proof’ to involve insurmountable evidence. Instead, I think Hume is better read as holding that a ‘proof’ consists of very strong and *exceptionless* evidence—but evidence that can nevertheless be outweighed by stronger evidence. See Hambourger (1980) and Millican (2011) for further discussion of this issue.

⁸ See Hume, *Of Miracles*, part II, 99.

⁹ McGrew and McGrew (2009) provide a useful discussion of this section of Hume’s essay.

suggests that all testimony to the miraculous is tainted and thus provides insufficient evidential force to make it rational to believe a miracle report.

The overall conclusion of Hume's essay is that 'no human testimony can have such force as to prove a miracle, and make it a just foundation for any system of religion' (*EHU*, X, 98). Parts I and II work together to support this conclusion. Part I sets the standards for rational belief in a miracle report: due to the reverse test, testimony for miracle reports must be excellent. Though the standards are high, they are in principle satisfiable. Part II attempts to show that in cases of miracle reports, these standards have not been met and will not be met. Testimony for miracles is never excellent. In conjunction, these two methods of evaluation serve to diminish the evidential force of any miracle report to such an extent that it is never rational to believe that a miracle occurred on the basis of the report alone, or so Hume maintains.

It is often overlooked that Hume limits the conclusion of his overall argument in part II. Testimony to a miracle that does not purport to be evidence for a religion does not suffer, in Hume's eyes, from the same sort of unhealthy track record (though it will still be an exceptionally improbable event). Hume takes pains to emphasize this point:

I beg the limitations here may be remarked, when I say, that a miracle can never be proved, so as to be the foundation of a system of religion. For I own, that otherwise, there may possibly be miracles, or violations of the usual course of nature, of such a kind as to admit proof from human testimony; though, perhaps, it will be impossible to find any such in all the records of history. (*EHU*, 99)

Testimony to a non-religious 'miraculous' event, such as Hume's example of eight days of darkness, is not discounted in the way testimony to a religious miracle is because testimony to a non-religious miracle does not suffer the same poor track record. It would be helpful if Hume had said more about the distinction I am attributing to him between 'religious miracle' and 'non-religious miracle'. Unfortunately, the best indication of what he has in mind is that a miracle 'ascribed to any new system of religion' or intended as 'the foundation of a system of religion' is of the former sort, and the example of the eight days of darkness is of the latter kind. I will not make much of this distinction (and will hereafter use 'miracle report' to refer to a religious miracle), except to note that it gives further support to the thesis that it is not merely the improbability of a miracle that drives Hume's argument; rather, it is the combination of the improbability with the poor track record of testimony to these events.

In all this, Hume does not invoke skepticism concerning testimonial knowledge or justification. He does not claim, as some have thought, that testimony is in general a weak source of knowledge. His thought is, rather, that some *kinds* of testimony are of better quality than other kinds, and that this particular kind of testimony—testimony to religious miracles—is manifestly unreliable. Furthermore, Hume does not claim that in a 'contest' between the direct and reverse test with respect to a miracle report the evaluation will always favor the reverse method.

As others have observed, Hume overstates just how excellent testimony to a miracle must be to offset the high standard set by the improbability of the event. But despite the many strong reactions his claims about the improbability of miracles have provoked, his bold claims about the bad track record, however controversial, have been less discussed. In section 1.1.2, I investigate how a past poor track record of testimony to some type of event ought to influence present evaluations of token instances of such testimony.

1.1.2 *Track record defeat*

Whether the track record for miracle reports is strong or weak is a matter for empirical investigation. I will proceed on the assumption that Hume is right to think the track record is fairly poor.¹⁰ Yet it is not obvious how awareness of a poor past track record should affect one's reception of miracle reports now and in the future. I will suggest that this aspect of reasoning in part II of Hume's essay takes the form of an undercutting defeater. Undercutting defeaters reduce justification for a belief one has by giving one a reason to lose confidence in the source of that belief. (For example, on common pictures of defeat, someone telling you that the room is illuminated with red light provides you with an undermining defeater for your belief that an object in the room is red.)

It will help to clarify, in general, how evidence of past unreliability can provide an undermining-defeater for (or reason to distrust) a particular instance of testimony. A first approximation of the reasoning is the following:

TRACK RECORD DEFEAT: If type-*X* testimony has been unreliable, then one is not justified in believing *p* when *S* testifies that *p* (where this is an instance of type-*X* testimony).

This principle is in need of qualification. First, the reasoning applies only in the absence of additional evidence for *p*. The principle is false, for example, in cases where *S* testifies to *p* but one already knows *p*.

Second, as stated, the principle does not require that the recipient of the testimony know or even believe that testimony to an event of type *X* has been unreliable. On a common picture of epistemic defeat, one's justification for a belief is defeated only when one is aware of the defeater. It seems that Hume tacitly assumes that most people are aware of the poor track record for miracle reports (or perhaps that any rational inquirer will very easily become aware of the track record).

A further issue needs flagging. The principle requires classification of events under a type. But, as is widely observed, events fall under multiple types. The problem of the reference class is familiar and, some have claimed, intractable.¹¹ Because of this

¹⁰ Even if the track record turns out to be quite a bit better than I am supposing, the assumption is harmless, given that many people rationally believe the track record is pretty poor. On many standard views, this suffices for a belief's positive epistemic status to be defeated.

¹¹ See Hájek (2006) and Gendler and Hawthorne (2005) for further discussion.

problem, the principle will not be true in full generality. I'll assume that in the case of miracle reports we have a rough-and-ready ability to identify the relevant type—an ability sufficient to make this kind of reasoning rational.

Finally, and perhaps most importantly, the reasoning will not apply in cases where one has special reason to trust the testifier. The mere fact that people often lie about some subject matter is not in itself always a reason to distrust testimony on the subject. While the fact that people tend to lie about their age and weight might in general provide one with a reason to distrust someone's report of their age or weight, this fact will not be a reason for disbelief in all cases. For instance, in a hospital setting where a correct diagnosis of a patient's condition depends on an accurate report of his age, a doctor is rational to trust the patient's word. Likewise, given the right circumstances, if a trustworthy friend tells you that he observed a miracle, the fact that many people give false testimony about miracles will not in itself determine whether you ought to trust your friend. Your friend's testimony falls into a more specific reference class than merely that of *type-X testimony*.¹²

These points motivate the following reformulation of the principle:

TRACK RECORD DEFEAT*: In the absence of evidence for S's reliability and evidence for *p*, if you justifiedly believe that type X-testimony is unreliable, then when S testifies to *p*, where this is an instance of type X-testimony, you are not justified in believing *p*.

It is instructive to see how this kind of reasoning compares to what many would take to be clear cases of defeat. Suppose you know you are in a room of people who have a strong history of lying (we may suppose they lie roughly 45% of the time). If you know nothing else about the person you are speaking with or about the content of what he says, it is natural to think you are not justified in believing what he says, even when he is telling the truth.¹³

Track record defeat is also similar to finding out you are in barn façade county. To put a twist on the usual case, suppose you know that you are entering barn façade county—an area with a high distribution of fake barns. It is natural to think that even if you are in view of a real barn, your justified belief that there are fake barns in your immediate surroundings serves as a preemptive defeater for the proposition that you

¹² We need to distinguish special evidence about the testifier from mundane evidence. Typically, when we receive testimony we get some mundane evidence about the speaker—that he is not insane, he is not at gunpoint, and so on. The principle allows for the kind of mundane evidence that ordinarily accompanies testimony.

¹³ A belief may have defeating force in settings where one simply believes rather than knows the relevant defeater (in this case, that one is in a room of liars). Likewise, defeat may occur when one merely believes that the kind of testimony in question has a bad track record, rather than justifiedly believes. There is a choice point here, and Hume does not clearly indicate which he has in mind. As it is evident that Hume thinks that the track record is in fact unreliable, I articulate the relevant defeat principles using 'justified belief'. But it is worth noting that one could instead rely on principle that requires mere belief, should one find the corresponding picture of defeat attractive.

see a barn.¹⁴ Applied to testimony to the miraculous, the bad track record functions as a preemptive defeater: even if one were to receive testimony that a miracle occurred from someone who has knowledge that a miracle occurred, given that one already possesses a defeater, one fails to come to know that the miracle occurred. Moreover, it would be irrational to believe that the miracle occurred. In the case of testimony to the miraculous, here is the relevant principle:

MIRACLE REPORT DEFEAT: In the absence of evidence for S's reliability and evidence for p , if you justifiably believe that testimony that reports a miracle is unreliable, then when S testifies that p (where p is a miracle report) you are not justified in believing p .

Already these considerations reveal that Miracle Report Defeat will not apply in every case and thus Hume's conclusion, insofar as it relies on this reasoning, will not be as far-reaching as he seems to have expected.¹⁵ The antecedent of the principle will not be satisfied in all cases. Sometimes the hearer will have more information about the speaker than the mere fact that she reported a miracle, and in such cases the speaker's belonging to a general group of *testifiers to miracle reports* will not guarantee that the evidential force of the testimony is defeated. Nevertheless, in the absence of special evidence, believing that some testimony falls under a tainted reference class does provide reason to discount the testimony. In this way, the reasoning in Miracle Report Defeat can provide one with a defeater for testimony to the miraculous.

1.1.3 Dismissible miracle reports

Hume takes the reasoning a step further and claims not only that miracle reports suffer reduced evidential force, but that testimony to religious miracles is discredited to such an extent that the right response to such testimony is outright dismissal. Consider this passage:

But should this miracle be ascribed to any new system of religion; men, in all ages, have been so much imposed on by ridiculous stories of that kind, that this very circumstance would be a full proof of a cheat, and sufficient, with all men of sense, not only to make them reject the fact, but even reject it without farther examination. . . . As violations of truth are more common in testimony concerning religious miracles, than in that concerning any other matter of fact; this must diminish very much the authority of the former testimony, and make us form a general resolution, never to lend any attention to it, with whatever specious pretence it may be covered.

(EHU, X, 99)

¹⁴ I am aware that the terminology of 'defeat' is typically applied to cases where one *loses* some positive epistemic status due to the introduction of new evidence or information. But surely if we reverse the order of evidence, the phenomenon is similar enough to warrant the name. I shall proceed as if preemptive defeat is a kind of defeat, and those who are dissatisfied with this terminology can supply an alternative name for the notion I am exploring.

¹⁵ Hume claims his argument will be an 'everlasting check' on all 'superstition' of this kind, and will 'silence' advocates of miracles.

Testimony to religious miracles, according to Hume, is not only unable to justify believing the report, but ought to be ignored. According to Hume, the key feature of such testimony that makes it dismissible is its abysmal track record.¹⁶ As Fogelin nicely summarizes, ‘for Hume, it is an empirical fact, amply illustrated by history, that testimony concerning religious miracles is notoriously unreliable. On the basis of this general fact about the quality of such testimony, the wise reasoner has ample grounds for rejecting it.’¹⁷ (In this way, part II could be taken on its own to offer a sufficient reason to reject a miracle report. But the argument is strongest when part II is joined with the considerations of part I, and this is how Hume seems to have intended the argument to be understood.)

Hume maintains that we are always rational to dismiss miracle reports outright. This claim is too strong, for the reasons discussed above. Nevertheless, dismissing is often appropriate. Consider two kinds of dismissing attitudes one might have towards testimony one receives:

STRONG DISMISSIBILITY: testimony that p is strongly dismissible for S when the testimony provides no evidence for S that p .

WEAK DISMISSIBILITY: testimony that p is weakly dismissible for S when the testimony provides negligible evidence for S that p .

A few observations are in order. Both types of dismissibility are limited to settings where it is not certain on one’s evidence that p prior to receiving the testimony. (In a framework where one’s evidence consists of all and only the propositions one knows, this requires that S does not know p .)¹⁸ One setting where p is strongly dismissible for S is when it is certain on S ’s evidence that the testifier speaks falsely. It could be certain on one’s evidence that a testifier speaks falsely in a number of ways. It might be certain on one’s evidence that not- p ; alternatively, it could be certain before the testifier speaks that the testifier will speak falsely. (This is not intended to be an exhaustive list of the circumstances under which strong dismissing is appropriate.) In general, situations where testimony is strongly dismissible testimony will be rare. Thus, on this model, most cases of dismissing will be cases of weak dismissibility.

It is important to recognize that even when testimony is weakly dismissible it constitutes evidence for S that p —that is, the testimony raises the probability of p for S . In normal cases, receiving testimony that p will result in some ‘boost’ in one’s evidential

¹⁶ Note that the report in the eight days of darkness example is not outright dismissible, according to Hume, even though the same inclinations to surprise and wonder are present in this case. This suggests that the primary motivation for outright dismissal, in Hume’s view, is the abysmal track record for religious miracles—a track record which ‘natural miracles’ do not inherit.

¹⁷ See Fogelin (2003: 29).

¹⁸ It may be that even when you know p you can strongly dismiss testimony that p . For example, suppose you would usually believe p more robustly on finding out that S also believes p ; in cases where you have defeating evidence about S , her testimony may fail to have this strengthening effect.

probability for p , however small.¹⁹ (Note that this is true on both reductionist and anti-reductionist views of testimony. These two pictures disagree on how much of a boost testimony provides in the absence of a special reason to think the testimony reliable—the anti-reductionist maintains that the boost is normally enough to make belief in the report rational and the reductionist denies this. But for both sides of this divide, given plausible priors and in the absence of other relevant evidence about the testifier or concerning p , S will get some boost for p upon hearing testimony that p , even if the boost is negligible.)

Although an exact analysis of ‘negligible’ is not immediately available, a rough gloss can be given as follows: evidence that p is negligible for S when it provides S with an increase in evidential probability that is incredibly small in terms of absolute values.²⁰ It is possible that negligible evidence has the effect of doubling (or tripling) one’s credence for p , thus providing a significant boost when considered as a ratio, but in absolute values this counts as a negligible boost.²¹

It is worth noting that there may be cases of partial dismissing. If S tells me, ‘ P and Q ’ and I believe P but give no or negligible credence to Q , I will have partially dismissed S ’s testimony. When I receive a miracle report I may believe one component—that the event occurred—while dismissing the other—that the event was a miracle.

Even when we are entitled to strongly or weakly dismiss testimony, we may not be entitled to stop all inquiry into the matter. Sometimes evidence is easily available conditional on which p is very likely. Suppose I have evidence that you are just guessing, but there is a small chance that you are an expert and I could easily confirm whether you are an expert by asking a friend standing next to me. Conditional on you being an expert, p receives a significant evidential boost. Thus, even if it is appropriate for me to weakly dismiss your testimony when you tell me p , if I could easily find out

¹⁹ For testimony to be evidence for a miracle, it needs to be the case that the probability of the miracle is higher given the testimony than the prior probability of the miracle. We can confirm that this is the case using Bayes’ Theorem. It is safe to assume the probability of T given M is high, since it is likely that S will report the miracle should S observe a miracle. (To screen off any potential worries about this assumption we can also stipulate that you just asked S about M . Also, even if T given M were not high, in most cases it will be significantly higher than T given not- M , which is the relevant comparison.) On natural assumptions, the prior probability of receiving the testimony is very low, and thus the $PR(T | M) > PR(T)$. Since the $PR(M | T) = [PR(T | M)/PR(T)] * PR(M)$ it follows that, on these assumptions, $PR(M | T) > PR(M)$. Thus, in most cases, the testimony will be evidence for the miracle (in the sense of probability raising).

²⁰ One might also want to add the requirement that one’s initial credence is far from the threshold for belief, and thereby prevents one from switching from non-belief to belief as a result of a negligible boost. But it is hard to see how to motivate this addition apart from a gerrymandered account. In any case, this is unlikely to be an issue in the case of a miracle report because one will not start out close to the threshold for belief.

²¹ We might wish to limit this specific construal of ‘negligible’ to our present purposes. I do not mean to suggest that all cases where one’s credence is doubled or tripled are cases of negligible evidence, nor do I think that only absolute values are important to evaluating the strength of a piece of evidence; rather, for the specific purpose of evaluating miracle reports—where our credence generally starts out extremely low and remains extremely low after it is doubled or tripled—it strikes me as fair to characterize such an increase as ‘negligible.’ Thanks to Alex Pruss here.

that you are an expert, then I ought not close the matter by merely weakly dismissing.²² By contrast, sometimes one is entitled to dismiss the testimony and not pursue the matter any further. Call this *robust dismissibility*. Testimony can be robustly dismissible for S when there is no easily available evidence such that conditional on that evidence S's probability for p would get a significant boost. In some but not all cases, it will be overwhelmingly likely that there is no easily available evidence and thus S could know that probing will not help.

When a miracle report is dismissible, it will rarely be strongly dismissible. Most instances of miracle reports will result in a small increase in the hearer's evidential probability, even if the increase is small. (This point is especially important for replies to Hume's argument that rely on receiving testimony from multiple independent testifiers. If all miracle reports were strongly dismissible, there would be nothing to add up.)²³

1.2 The Role of Unlikelihood

I have thus far left to one side the issue of the improbability of a miracle. It should be clear at this point that the improbability of the event *alone* does not provide sufficient reason to dismiss a miracle report. We have seen that even Hume does not think that the improbability of the miraculous does all the work. Excellent testimony can make it rational to believe an event of this kind occurred (see again Hume's approval of belief in the eight days of darkness case). Hume simply denies that we ever have excellent testimony in the case of a religious miracle. But this is not to suggest that the improbability of the miracle plays no role at all in the rationality of dismissing testimony. In this section I'll explore the role of the reverse test.

The first thing to observe is that very unlikely events can be rationally believed on the basis of fairly ordinary testimony. Improbable events occur regularly and we believe reports that they have occurred without hesitation. It is improbable that my friend sat in seat 324 at the ball game last night, yet when she tells me that is where she sat, I believe her. Similarly, if you toss a fair coin a hundred times, carefully record the results and report the sequence, I am rational to trust your report, despite the fact that any sequence is incredibly improbable. Our practice of believing testimony to improbable events is evidence that we routinely assume that testifiers have extremely high reliability. In this way, even casual testimony can offset the 'weight' of the improbability of the unlikely event. Therefore, the thought that 'the more improbable an event is, the more evidence you need to rationally believe someone's testimony to that event' is misguided if taken to mean that rational belief in improbable events on the basis of

²² Given the availability of information through the Internet, there will almost always be something further one can do—namely, a quick web search—to access more evidence. As a result, it will not always be immediately obvious when one is entitled to close off inquiry. Thanks to Alex Pruss here.

²³ See Ahmed (2015), Babbage (1838), Earman (2000, 2002), Holder (1998), and Sorensen (1983) for discussion of responses to Hume's argument that involve testimony by multiple witnesses.

testimony requires a larger number of testifiers, or that the testifiers have especially impressive credentials.

This is not to suggest that the improbability of the event does not affect the posterior probability. To think thus would be to run the danger of committing the base-rate fallacy. It is a common mistake in ordinary reasoning to neglect the prior probability of a proposition. For example, when considering whether a patient has a particular rare disease, the frequency of the disease within the total population is the base rate. Holding fixed the reliability of a test (that is, holding fixed the false positive rate and the true positive rate), the chance a patient has the disease when receiving a positive test will depend on the base rate. The probability of a miracle is relevant to the credence one ought to assign to the report, but it does not do all the work.

It is helpful to distinguish cases of testimony to events with *sheer* improbability from cases of testimony to improbable events where it is also likely that the testifier either was deceived/mistaken or is trying to deceive. Most people are generally disposed to trust others when they report their phone number, despite that for any number, it is unlikely to have that number. Yet, if you tell me that your phone number is 1-234-456-6789, I am unlikely to believe you but not because the sequence is more improbable than any other sequence. Rather, it is because if you were going to give me a false number, you are more likely to pick certain sequences than others, and this particular sequence indicates deception.²⁴ The same applies if you tell me your name is John Watson and you live at 221 Baker Street.²⁵

The inverse of the base-rate fallacy might be called the *evidence-rate* fallacy. Focusing exclusively on the improbability of an event and neglecting to account for the likelihood of the evidence is to commit the evidence-rate fallacy. In the phone number case, the probability of receiving testimony that your phone number is 1-234-456-6789 is higher than the probability of less interesting numbers. The likelihood of receiving the evidence explains why I can gain knowledge of your phone number in the ordinary case, but not the interesting case.²⁶ Although the evidence-rate fallacy may be less common than the base-rate fallacy, those who suggest we cannot trust miracle reports due to the improbability of the miracle alone fall into this mistaken type of reasoning. Applied to miracle reports, if the likelihood of receiving testimony to a miracle were extremely low—close to as low as the miracle occurring—we would be rational to trust the testimony. But, as Hume notes, the probability of receiving testimony to a miracle is not nearly so low.

²⁴ It is tempting to think there is a direct relationship between the unlikeliness of the event and the probability that someone would be mistaken about it. But there seems to be no direct relationship. There are loads of improbable events that, were someone to witness one, the chance that they would make a mistake is extremely low. For example, supposing I saw an elephant ten feet away from me on High Street in Oxford, I would be unlikely to make a mistake about this event, however unlikely it is.

²⁵ A clever liar, of course, would not actually lie in this way (the deception would be so obvious as not to convince). But we need not attribute malicious intent to the speaker; perhaps they are playing a practical joke or testing the limits of the listener's gullibility.

²⁶ Thanks to Miriam Schoenfeld for helpful conversation on this issue.

Additionally, some reports indicate that the testifier is mistaken. Suppose a friend tells you she passed X number of red cars on her drive from Los Angeles to Dallas. The actual number of red cars she reports might be very likely the number one might see on such a journey, but it is also overwhelmingly unlikely that she was able to focus on counting for such a length of time and thus very likely that she missed at least a few red cars—or, that in poor lighting she mistook a non-red car for a red car.

The reduction of evidential force in the case of testimony to the miraculous does not depend solely on the improbability of the miracle—we need to look at more factors than mere improbability. But considerations regarding the track record will not secure the conclusion Hume wanted: to make all miracle reports dismissible outright. Hume does not offer us a path to sweeping dismissal—we must take each report on a case-by-case basis. Nevertheless, we can often rationally dismiss testimony to a miracle report. Hume is getting something right, though his argument overreaches.

1.3 An Alternative Picture of Defeat

Although the notion of defeat that I have argued is present in Hume's argument represents a familiar and standard notion in contemporary epistemology, recently a challenge has been put to this traditional conception. In this section, I consider whether adoption of a non-standard approach to defeat makes a difference to the reasoning advanced in Hume's argument. This recent departure from the traditional picture of defeat delivers a surprising result: on this picture, in principle it can be easier to come to know that a miracle occurred on the basis of a report. The picture is most naturally wedded to an account of evidence whereby one's evidence consists of all and only the propositions one knows (hereafter, $E = K$). This view of evidence has a further interesting result: on this view, it is potentially easier to be in a position to be entitled to strongly dismiss testimony to the miraculous.

1.3.1 *Unreasonable knowledge and trusting testimony*

The phenomenon of epistemic defeat poses a specific challenge to externalist positions, and to strong safety views in particular. Consider the following cases:

RED ILLUMINATION: At a time t_1 Suzy comes to know that a certain object is red based on perception. There is nothing abnormal about her perceptual abilities or the lighting in the room. At a slightly later time t_2 a highly reliable and trustworthy authority tells her that the object is illuminated by peculiar red lighting, lighting that would make objects of any colour look red.

BLACK MARBLE: Fred places exactly one red and one black marble into a bag. Based on perception at a time t_1 he knows that there is a black marble in the bag. He then starts making draws with replacement, carefully observing the outcome of each draw. Throughout, he remains certain that the contents of the bag do not

change. By a later time t_2 he has made two thousand draws, each of which has produced a red marble.²⁷

In each of these cases, the subject is presented with misleading evidence that the proposition the subject knows is false. In the presence of this misleading evidence, many find compelling the idea that the subject loses knowledge. Knowledge defeat raises a problem for safety theorists because they are hard pressed to explain why the subject's belief, which was safe at time t_1 (prior to receiving the misleading evidence), must be unsafe at time t_2 .

In response to challenges of this kind, Maria Lasonen-Aarnio (2010) rejects the idea that the presence of misleading evidence inevitably defeats the subject's knowledge.²⁸ Roughly, her idea is that in cases where a subject initially has knowledge and sticks to her guns in the face of misleading evidence, she can continue to use a safe method to retain her initial belief. Of course, as Lasonen-Aarnio notes, in such cases the subject may be criticized for being unreasonable. After all, she exhibits an epistemically undesirable disposition—a disposition that, in the long run, is not knowledge-conducive.

Consider how this approach to defeat, together with a few other plausible assumptions, might apply in another case:²⁹

BLACKMARBLES II: You observe 1,000 marbles drawn at random (with replacement) from a bag. All are black. You know there are only five marbles in the bag (and you retain this knowledge throughout the case). Then someone tells you that there is a red marble in the bag. In fact there is a red marble in the bag and the testifier knows this.

First, let us look at how the widely received view regarding defeat would respond to this case. Assume that you know nothing about the testifier. It is extremely unlikely on your evidence, prior to receiving the testimony, that there is a red marble in the bag. It is natural to think that in these circumstances you do not come to know there is a red marble in the bag, even if you believe the testimony. By contrast, on Lasonen-Aarnio's picture, combined with some fairly standard assumptions about the transfer of knowledge via testimony, you can come to know that there is a red marble in the bag by believing the testimony. (We also need to assume that trusting the testimony constitutes a safe method. But this stipulation is quite plausible. Consider that if we reverse the order of evidence—if you received testimony that there was a red ball in the bag *before* you made the black marble draws—it would be odd to deny that you could

²⁷ Both of these cases appear in Lasonen-Aarnio (2010).

²⁸ Of course, should the subject stop believing p in light of the misleading evidence, then all relevant parties agree that she thereby loses knowledge that p ; I am bracketing doxastic defeat for the purposes of this discussion.

²⁹ One of these assumptions is commutativity—the idea that changing the order of evidence does not make a difference to the credence one ought to have.

initially come to know that there is a red marble in the bag by trusting the testimony. Therefore, there is considerable pressure to think the method is safe.)

A line of thought that some might find appealing is one according to which a subject employs a different method when one believes p in the presence of counterevidence. In this way, even if one originally believes p via a safe method, when the presence of counterevidence enters into the characterization of the method, the subject's new method will be unsafe. For example, the relevant method might be something like 'trusting testimony while dismissing counterevidence.' This method would not be knowledge-producing (since generally such a method will produce false belief). Although this approach would provide a way out of the current problem, and is initially quite plausible, Lasonen-Aarnio considers and rejects this approach on grounds of the lack of an explanation for why the original safe method is unavailable. There is no reason, she claims, that the method must be characterized so as to include the presence of defeating evidence. (Lasonen-Aarnio acknowledges that believing in the presence of counter-evidence normally leads to false beliefs, but she maintains that sometimes generally unsafe methods result in safe beliefs in particular circumstances.)³⁰

In cases of testimony to the miraculous, this kind of approach delivers the result that it is possible to obtain knowledge that a miracle occurred in a wider range of settings: if trusting a particular instance of testimony in fact constitutes a safe method, one can come to know a miracle occurred even if one believes that this kind of testimony has a bad track record and lacks special evidence that this testifier is reliable.

Although Hume would be unhappy with this result, it is worth noting a point on which Lasonen-Aarnio and Hume are in agreement: it is unreasonable in such cases to believe the testimony. Despite possessing knowledge of the miracle report, on Lasonen-Aarnio's picture, one is still in some way criticizable for the belief. Due to this agreement regarding one kind of epistemic criticism a subject earns in such cases, the two pictures have something important in common.

1.3.2 $E = K$ and dismissing testimony

I conclude with two observations regarding testimony and $E = K$. The first is that given $E = K$, in a case where one trusts a miracle report and comes to know that a miracle has occurred, the prior improbability of the miracle is completely irrelevant. All known propositions have probability one on a subject's evidence, regardless of the probability each had on the subject's evidence prior to coming to know.

A further interesting result of an $E = K$ framework, combined with Lasonen-Aarnio's picture of defeat, is that one is rational to strongly dismiss testimony more often.³¹ Consider that given $E = K$, if there is widespread knowledge that miracles do not

³⁰ See Lasonen-Aarnio (2010) for comprehensive discussion.

³¹ It is important to recognize that a knowledge-first picture does not require that one adopt a 'no-defeat' approach, though Lasonen-Aarnio provides reason to think that there is some pressure to do so. $E = K$ is consistent with the idea that knowledge can be defeated, in fact in Williamson (2000) he suggests that knowledge can be lost in the presence of misleading evidence.

happen, then many are in a position to know that a testifier speaks falsely whenever a miracle is reported. Since on this picture epistemic probabilities are a result of conditionalizing on your total body of knowledge at any given time, if you know that miracles do not occur then this proposition is certain on your evidence; as long as you do not lose your knowledge that miracles do not occur when you hear a miracle report, you are entitled to strongly dismiss the report. (One way knowledge that miracles do not occur might be widespread is if knowledge that God does not exist is widespread. Although such knowledge is not ruled out by alternative theories of evidence, because many common models do not hold that all known propositions have probability one on one's evidence, knowledge that God does not exist would not make it rational for one to strongly dismiss a miracle report, on these views.) In this way, E = K delivers the result that if there is widespread knowledge that miracles do not occur, the entitlement to strongly dismiss miracle reports is in general much more common. (Obviously, in the settings identified above one's entitlement to dismiss the relevant testimony is contingent upon it being known that miracles do not occur or God does not exist. If these propositions are false or unknown, the corresponding result will be thwarted.)

In conclusion, the improbability of a miraculous event has played too central a role in many recent discussions of Hume's essay. Despite its centrality in recent discussions of Hume's essay, the mere improbability of a miracle cannot defeat testimonial evidence to such an event. Considerations concerning the reliability of the testimony are crucial to the argument. Although the argument is unable to establish as sweeping a conclusion as Hume hoped, the reasoning does explain why so many of us dismiss many miracle reports. Hume's argument gets something right but overreaches.³²

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