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Martin on Miracles

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1. Introduction

David Hume proposed in his well-known definition that a miracle is a violation of a law of nature—an exception to an exceptionless regularity.[1] He urged further that against every event properly called a miracle there *must* be a uniform experience.

> There must be a uniform experience against every miraculous event, otherwise the event would not merit that appellation.[2]

It is equally well-known that miracles as Hume defines them are impossible. We cannot observe an exception to exceptionless regularity and we cannot experience an event against which there is a uniform experience. Otherwise the regularity would be (at most) *almost* exceptionless and the experience against the event would be (at most) almost uniform.

We might conclude that miracles are impossible. But certainly the more reasonable conclusion is that Hume offered a tendentious definition of 'miracle'. Michael Martin proposes instead that miracles are events that are brought about by the exercise of a *supernatural power*.

> [A supernatural power] is one that is markedly superior to those powers possessed by humans. Supernatural powers are possessed by supernatural beings: gods, angels, Superman, devils. If supernatural beings exist, the powers that they possess need not be in violation of laws of nature.[4]

Miracles need not violate a law of nature according to Martin and there need not be a uniform experience against miraculous events. Each observed miracle might be preceded by numerous similar miracles.

> It is not logically impossible for a miracle worker to bring many people

> back to life. Indeed, so called faith healers . . . have allegedly brought about numerous miracles of the same type. One might question the truth of these claims but there is nothing incoherent in the stories.[5]

Call Martin's conception of miracles 'm-miracles'. In section 2, I consider Martin's argument that the occurrence of an m-miracle would not confirm the existence of God. Martin presents an interesting argument, but it does not establish that m-miracles would not confirm the existence God. In section 3, I argue that, on the contrary, it is quite reasonable to conclude that Martin's m-miracles provide *some* confirmation for the hypothesis that God exists.

2. M-Miracles and God's Existence

Martin argues that the occurrence of an m-miracle would not confirm the hypothesis that God exists. Here's the brief version of Martin's argument.

> Let us suppose that miracles in the sense defined above—that is, events brought about by the existence of a supernatural power—do occur. Would this be good evidence for the existence of God? To state my answer briefly, it would not be, since miracles might be the result of the actions of other supernatural beings besides God.[6]

There are two sorts of confirmation that the observation of an m-miracle might confer on the hypothesis that God exists. Let E be the observation of a m-miracle and let H_1 be the hypothesis that God exists. Let k include all of the relevant background information. The evidence in E provides *absolute confirmation* for God's existence *only if* God's existence given E is more probable than not.

$$(1)\ Pr(H_1 / E \,\&\, k) > Pr(\sim H_1 / E \,\&\, k)$$

According to (1) the probability of God's existence on the observation of an m-miracle is greater than the probability of God's non-existence on the same observation. If it is reasonable to believe any proposition that is more probable than not, then if (1) is true, then it is reasonable to believe that God exists on E and k. But (1) gives us almost no information about whether E constitutes evidence in favor of God's existence. (1) might be true though E provides no incremental confirmation at all for the hypothesis that God exists. Indeed (1) might be true though E incrementally disconfirms the hypothesis that God exists. The evidence E provides *incremental confirmation* for God's existence if and only if E increases to some degree the probability that God exists.

$$(2)\ Pr(H_1 / E \,\&\, k) > Pr(H_1 / k)$$

According to (2) the probability that God exists given the observation of an m-miracle is greater than the probability that God exists prior to observing the m-miracle. Of course it is perfectly possible that E incrementally *disconfirms* H_1 and that (1) is true. It depends entirely on the prior probability for

the hypothesis that God exists. Suppose the prior probability that God exists is greater than the prior probability that he does not.

$$(3)\ \Pr(H_1/k) > \Pr(\sim H_1/k)$$

In that case (3) is true and the evidence in k on balance favors the hypothesis that God exists. It can then be reasonable to believe that God exists though E incrementally disconfirms the hypothesis that God exists. But if the prior probability that God exists is *less than or equal to* the prior probability that he does not, then E incrementally disconfirms H_1 only if (1) is false.

$$(4)\ \Pr(H_1/k) < \Pr(\sim H_1/k)$$

$$(5)\ \Pr(H_1/k) = \Pr(\sim H_1/k)$$

Finally, if the prior probability that God exists is *greater than or equal to* the prior probability that he does not—that is, if (3) or (5) are true—then E incrementally confirms H_1 only if (1) is true. So the observation of m-miracles might have considerable evidential significance for rational theistic belief. It depends entirely on the troublesome prior probabilities for the hypothesis that God exists.

Martin's main argument is against (2). There is no discussion at all in his argument of the prior probability of the hypothesis that God exists and there is no discussion of the relation between incremental and absolute confirmation. Martin urges that the observation of an m-miracle provides no incremental confirmation for the hypothesis that God exists. The argument Martin advances observes first that (2) is true if and only if (6) is true,

$$(6)\ \Pr(E/H_1 \text{ and } k) > \Pr(E/k)$$

So E confirms H_1 if and only if H_1 confirms E. The argument is simple. Suppose that H_1 confirms E. It follows that,

$$\Pr(E/k) \times \frac{\Pr(H_1/E \,\&\, k)}{\Pr(H_1/k)} > \Pr(E/k)$$

But of course that is true if and only if,

$$\Pr(H_1/E \,\&\, k) > \Pr(H_1/k)$$

It follows that H_1 confirms E only if E confirms H_1. And the converse is also evident. If E confirms H_1 then (6) is true as well. Martin's argument continues with the observation that (6) is true if and only if (7).

$$(7)\ \Pr(E/H_1 \,\&\, k) > \Pr(E/\sim H_1 \,\&\, k)$$

That can seem strange. H_1 confirms E only if H_1 provides greater confirmation for E than does $\sim H_1$. But the argument is again straightforward, and it is useful in assessing Martin's general argument. (7) is true if and only if (8) is true.

$$(8)\ \frac{\Pr(H_1/E \,\&\, k)}{} > \frac{\Pr(\sim H_1/E \,\&\, k)}{}$$

$$\Pr(H_1/k) \qquad \Pr(\sim H_1/k)$$

But (6) is true if and only if the left side of the inequality in (8) is greater than 1. And of course the left side is greater than 1 only if the right side is less than 1. So (6) is true only if (7) is true. And the converse is also evident.

Premises (2)-(8) entail Martin's central premise that the proposition about incremental confirmation in (2) is equivalent to the proposition about likelihoods in (7).

$$(9)\ \Pr(H_1/E \,\&\, k) > \Pr(H_1 / k) \;\square\; \Pr(E / H_1 \,\&\, k) > \Pr(E/\sim H_1 \,\&\, k)$$

The proposition in (9) states that the observation of an m-miracle confirms the hypothesis that God exists if and only if the observation of an m-miracle makes God's existence *more likely* than God's non-existence.

But Martin urges that the observation of an m-miracle *does not* make God's existence more likely than God's non-existence. Indeed Martin argues that the observation of an m-miracle makes God's existence *less likely* than God's non-existence. Here's Martin.

> One can immediately see a problem with [the right side of (9)]. It is completely unclear why one would suppose that [the right side of (9)] is true. After all, $\sim H_1$ can be interpreted as a disjunction of hypotheses consisting of H_1's rivals. Included in this disjunction would be hypotheses that postulate finite but very powerful beings that have as their basic motive the desire to work miracles. The probability of E relative to these hypotheses about finite miracle workers would be one. The probability of E relative to other members of this disjunction would vary from zero to near-one. There's no *a priori* reason to suppose that the probability of E relative to the entire disjunction would be less than the probability of E relative to H_1.[7]

Martin makes no mention at all of the prior probabilities of God existing or theism. But his argument cannot be assessed in the absence of the priors for theism and atheism. To keep matters fair to theist and atheist alike, we might assume that the priors for theism equal the priors for atheism. Under that assumption it is true that,

$$\Pr(E/H_1 \,\&\, k) > \Pr(E/\sim H_1 \,\&\, k) \;\square\; \Pr(H_1/E \,\&\, k) > \Pr(\sim H_1/E \,\&\, k)$$

So the dispute comes down to our initial proposition in (1).

$$(1)\ \Pr(H_1/E \,\&\, k) > \Pr(\sim H_1/E \,\&\, k)$$

Does E provide greater confirmation for the atheistic hypothesis $\sim H_1$ or does E provide greater confirmation for the theistic hypothesis H_1? The atheistic hypothesis is equivalent to the disjunction of *powerful being hypotheses* that are consistent with an atheistic explanation of E. Martin singles out for emphasis the following hypothesis,

> Included in this disjunction would be hypotheses that postulate *finite but very powerful beings that have as their basic motive the desire to work miracles*. The probability of E relative to these hypotheses about finite miracle workers would be one.[8]

Call that the *SuperOne Hypothesis*. Does the evidence in E confirm the *SuperOne* hypothesis? Martin suggests that it does, but in fact it doesn't. And since E does not confirm B, the disjunct B does not increase the value of $Pr(\sim H_1 / E \& k)$.

$$Pr(B/E \& k) = Pr(B/k) \times \frac{Pr(E/B \& k)}{Pr(E/k)}$$

The probability of the *SuperOne Hypothesis* given the observation of the m-miracle depends on the prior probability of the *SuperOne Hypothesis*. So apart from observing the m-miracle, what is the probability that there exist finite but very powerful beings that have as their basic motive the desire to work miracles? There is no evidence at all for the existence of such non-theistic fantastic beings or, at least, I don't know of any. The prior probability of the *SuperOne Hypothesis* in Pr(B/k) is not greater than zero.[9] It is properly given no credence at all. And so the posterior probability of the *SuperOne Hypothesis* in Pr(B/E & k) is also zero. Disjoining B to the set of hypotheses in $\sim H_1$ does not raise the value of $Pr(\sim H_1/E \& k)$ and so contributes nothing to falsifying (1).

But let's consider other possible hypotheses. Consider the possibility of very powerful, supernatural, non-theistic beings that perform miracles for their own entertainment. Call that the *SuperTwo Hypothesis*. Apart from the occurrence of m-miracles, what is the probability that there exist very powerful, supernatural, non-theistic beings that perform m-miracles for their own entertainment? There is no evidence at all for the existence of such imagined beings. The prior probability of the *SuperTwo Hypothesis* cannot be greater than zero. And so the posterior probability of the *SuperTwo Hypothesis* in $Pr(B_2/E \& k)$ is also zero. Disjoining B_2 to the set of hypotheses in $\sim H_1$ does not raise the value of $Pr(\sim H_1/E \& k)$ and so contributes nothing to falsifying (1).

Are there other atheistic super-being hypotheses that might explain the occurrence of m-miracles? We cannot introduce any gods from the Greek, Roman or Hindu polytheistic views. These are all theistic views. We are in search of an *atheistic superbeing hypothesis* that is not *ad hoc*.

Consider then the possibility that an evil demon whose sole purpose is to confuse and deceive human beings by means of m-miracles. The principle purpose among evil demons, Descartes famously observed, might be global deception. Perhaps what looks like lawlike behavior among objects is nothing less than a series of m-miracles that mimics lawlike regularity. In this case there are m-miracles occurring everywhere and the hypothesis that best explains the existence of these m-miracles is that there exist evil demons whose sole purpose is to confuse and deceive human beings by means of m-miracles. Call that the *SuperThree Hypothesis*. But what is the prior probability that there exists an evil demon whose principle purpose is to produce global deception through m-miracles? Again, as far as I know, there is no evidence at all for the existence of such an imagined being. The prior probability of the *SuperThree Hypothesis* is zero. I am prepared to wager

nothing on its being true and anything on its being false. And so the posterior probability of the *SuperThree Hypothesis* in $Pr(B_3/E \ \& \ k)$ is also zero. Disjoining B_3 to the set of hypotheses in $\sim H_1$ does not raise the value of $Pr(\sim H_1/E \ \& \ k)$ and so contributes nothing to falsifying (1).

The introduction of atheistic superbeing hypotheses is not problematic in cases where there is some antecedent reason to believe that such a being exists. But it is plain that the introduction of atheistic super-being hypotheses is simply *ad hoc* in cases where the prior probability that such a being exists is zero.

There is some temptation to give any coherent hypothesis that is at least consistent with our background evidence in k some positive probability. But this temptation should be resisted and it is not difficult to see why.[10] Consider the general form of Bayes' Theorem,

$$Pr(M/E \ \& \ k) = \frac{Pr(M/k) \times Pr(E/M \ \& \ k)}{[Pr(M/k) \times Pr(E/M \ \& \ k) + Pr(H_1/k) \times Pr(E/H_1 \ \& \ k) + Pr(H_2/k) \times Pr(E/H_2 \ \& \ k) + \ldots + Pr(H_n/k) \times Pr(E/H_n \ \& \ k)]}$$

Suppose you are trying to determine the probability that there is a tree in your backyard given that you have observed a tree-like object in the backyard. Let M represent the proposition that there is a tree in the backyard and let E represent the proposition that you observed a tree-like object in the backyard. Since the observation does confirm the existence of a tree in the backyard (10) should certainly come out true.

$$(10) \ Pr(M/E \ \& \ k) > Pr(M/k)$$

But suppose you give in to the temptation to give any coherent hypothesis that is consistent with our background evidence in k some positive probability. There follows a simple method to ensure that (10) comes out false. Let H_1 be the hypothesis that there is a *blue spotted* demon that causes me to observe tree-like objects that are not trees when I look in the backyard. Since that hypothesis is coherent it follows that $Pr(H_1/k)$ has some positive value. Since the value of $Pr(E/H_1 \ \& \ k)$ is one, the value of $[Pr(H_1/k) \times Pr(E/H_1 \ \& \ k)] = Pr(H_1/k)$.

Now repeat the procedure. Let H_2 be the hypothesis that there is instead a *green (and not blue) spotted* demon that causes me to observe tree-like objects that are not trees when I look in the backyard. Be sure to specify H_2 so that H_2 is consistent with k, H_2 entails E, and H_2 is incompatible with every other hypothesis. Since the hypothesis in H_2 is coherent it follows that $Pr(H_2/k)$ has some positive value. And since the value of $Pr(E/H_2 \ \& \ k)$ is one, the value of $[Pr(H_2/k) \times Pr(E/H_2 \ \& \ k)] = Pr(H_2/k)$. Since there is an indefinitely large number of independent skeptical hypotheses that are consistent with the background information k the sum of $Pr(H_1/k) + Pr(H_2/k) + Pr(H_3/k) + \ldots + Pr(H_n/k)$ can approximate one. But then the fact that you have observed a tree-like object in the backyard will not confirm the proposition that there is a tree in the backyard. The probability that there is a tree in your backyard given the observation of a tree-like object in the backyard

reduces to the following.

$$\Pr(M/E \ \& \ k) = \Pr(M/k) \times \Pr(E/M \ \& \ k)$$

Pr(M/E & k) cannot be greater than Pr(M /k) in that formula. And indeed it could well be less. Something has gone wrong. The observation of a tree-like object *does* confirm the existence of a tree. Clearly the mistake was to give these wild skeptical hypotheses some positive probability simply on the basis of their coherence. As we noted above it is far more reasonable to resist the temptation to give any coherent hypothesis that is consistent with the background evidence in k some positive probability.

There is similarly no basis for giving the *SuperOne Hypothesis*, *SuperTwo Hypothesis*, *SuperThree Hypothesis* or any other atheistic super-being hypothesis that we can imagine any positive probability on k. The probability of each of these hypotheses prior to learning that m-miracles occur is zero. But then disjoining these hypotheses in $\sim H_1$ does not raise the value of $\Pr(\sim H_1/E \ \& \ k)$ and so contributes nothing to falsifying (1).

It seems fair to conclude that we have no reason to believe that $\Pr(\sim H_1/E \ \& \ k)$ is greater than $\Pr(H_1/E \ \& \ k)$. We noted the following equivalence above.

$$\Pr(E / H_1 \ \& \ k) > \Pr(E/\sim H_1 \ \& \ k) \ \square \ \Pr(H_1/E \ \& \ k) > \Pr(\sim H_1/E \ \& \ k)$$

So contrary to Martin's conclusion we have no reason to believe that $\Pr(E / \sim H_1 \ \& \ k) > \Pr(E / H_1 \ \& \ k)$. And as Martin observes we also have the equivalence in (9).

$$(9)\ \Pr(H_1/E \ \& \ k) > \Pr(H_1 / k) \ \square \ \Pr(E/H_1 \ \& \ k) > \Pr(E/\sim H_1 \ \& \ k).$$

So we have no reason to believe that E does not confirm H_1. But then we have no reason to believe that the occurrence of m-miracles does not confirm theism.

3. Do M-Miracles Confirm Theism?

M-miracles confirm theism, of course, just in case the value of $\Pr(H_1/E \ \& \ k)$ is greater than the value of $\Pr(H_1/k)$. We assumed above that the prior probability of the hypothesis that God exists is equal to the prior probability of the hypothesis that God does not exist. So, m-miracles confirm theism if and only if (11) is true.

$$(11)\ \Pr(H_1/E \ \& \ k) > \frac{.5 \ \Pr(E/H_1 \ \& \ k)}{\Pr(E/ \ k)}$$

And the inequality in (11) is true if and only if H_1 confirms E. So the question is whether theism would increase the probability that we observe m-miracles. We are after all assuming that m-miracles occur and so, according to Martin's definition, there are events occurring that are brought about by a supernatural power. Would the existence of a supernatural being increase the chances that there occur events brought about by a supernatural power?

Would the existence of a gardener increase the chances that there occur events brought about by gardeners? It does seem so. The hypothesis that God exists does make it more probable that there are events brought about by a supernatural power. Of course it is very difficult to know how much more probable H_1 makes E. But given the aims of this paper, there is no need to speculate on the degree of confirmation that E affords H_1.

We have rather sought to establish that m-miracles do not confirm the hypothesis that there exist very powerful, supernatural, non-theistic beings and that m-miracles do confirm the hypothesis that God exists. Since the prior probability of there existing very powerful, supernatural, non-theistic beings is zero—there is no evidence at all in k that such beings exist—it is fair to conclude that m-miracles do not confirm their existence. And since the prior probability of there existing very powerful, supernatural, theistic beings is not zero, we have found good reason to believe that m-miracles provide at least some confirmation for the existence of such beings.

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NOTES

1. David Hume, *Enquiries Concerning Human Understanding and Concerning the Principles of Morals*, 3rd ed., ed. P. H. Nidditch (Oxford: Clarendon Press, 1975). The excerpt is from Section (10) *Of Miracles*, p. 114.

2. Ibid., p. 115.

3. Michael Martin, *Atheism: A Philosophical Justification* (Philadelphia: Temple University Press, 1990), p. 190.

4. Ibid. p. 190 ff.

5. Ibid. p. 191.

6. Ibid. p. 191–192.

7. Ibid. p. 191.

8. Here I follow Hájek in finding dubious the suggestion that we cannot rationally assign zero probability to hypotheses of this sort including, for some strict atheists, the hypothesis that God exists. See Alan Hájek, "Waging War on Pascal's Wager," *Philosophical Review* 112 (2003): 27–56.

9. ???????

10. Rescher makes the suggestion that it might be rational for atheists to put zero probability on theism in *Pascal's Wager*. See Nicholas Rescher, Pascal's Wager (Notre Dame, Ind.: University of Notre Dame Press, 1985). This conclusion does make the agent's probability function irregular. A probability function is regular if and only if it assigns probability 1 only to logical truths and 0 only to contradictions. Among those who defend regularity as a condition of rationality (for less-than-perfectly rational agents) are David Lewis, "A Subjectivists Guide to Objective Chance" in *Studies in Inductive Logic and Probability*, ed. Richard Jeffrey (Berkeley: University of California Press, 1980); and Anthony Appiah, *Assertion and Conditionals* (Cambridge, UK: Cambridge University Press, 1985).