**Religious Belief, Miracles, and David Hume**

**A Seriously Misleading “Deductive” Parody of Hume’s Argument**

- “A miracle is a violation of the laws of nature, and … a firm and unalterable experience has established these laws … There must, therefore, be a uniform experience against every miraculous event, otherwise the event would not merit that appellation. … there is here a direct and full proof, from the nature of the fact, against the existence of any miracle.” (10.12)

**Not a Logical Contradiction …**

- The parody makes it appear that Hume is ruling out miracles by definition: the very notion of a violation of a uniform “law of nature” is supposed to be contradictory.
- But this cannot be what Hume is doing, given the context of the argument. The entire discussion is framed in terms of probability.
- Note that Hume’s term “proof” is defined – explicitly – as a strong probable argument.

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**Why Pick on Homeopathy?**

- Homeopathy was invented by Samuel Hahnemann in 1796, in ignorance of the causes of disease (e.g. microbes). Diseases he categorised by symptoms, not causes.
- The theory of homeopathy can work only if the water in which the “active” substance was diluted can continue to “remember” it, even when no “active” molecules remain.
- So homeopathy is implausible. But why should it feature in a discussion of miracles?

**A Successful Cure?**

- Fred is concerned about a genetic disease that becomes apparent only in old age, and affects one in a million of the population.
- He therefore takes a test, which has a 99.9% chance of correctly reporting one’s genetic disease state. It comes out positive!
- But the disease isn’t always virulent, and may be treatable. A friend persuades him to visit a homeopath, whom he consults for the next few years. It seems to work …

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**A Less Misleading Parody**

- A miracle, by definition, is a “violation of a law of nature”, so highly improbable.
- Hence if M is an alleged miracle, the evidence from experience against M’s having occurred must be as strong as any evidence can be.
- But human testimony is never that strong: we know people can lie or make mistakes.
- Therefore testimonial evidence for M can never be strong enough to outweigh its intrinsic improbability.

**The Context of Hume’s Argument**

- Hume’s discussion in Enquiry 10 applies the analysis of probability in Enquiry 6, showing how, in general, his inductive method is to be applied to competing “probabilities”.
- His central idea is that all “probable” evidence – including testimonial evidence – is inductive: founded on experience, and proportional to the strength (e.g. the amount and consistency) of that experience.
Denying any Privilege to Testimony

- Hume says we should treat evidence from testimony in much the same way as any other “probability”: on its inductive merits.
- And experience tells us that testimony tends to be more or less reliable, depending on its nature and other circumstances.
- Hume’s approach to probability can be seen as taking further the ideas in Locke’s Essay IV xvi 9, but more consistently …

The Lockean Exception

- Locke had treated miracles as an exceptional case (Essay IV xvi 13): “Though the common Experience, and the ordinary Course of Things have justly a mighty Influence on the Minds of Men … yet there is one Case, wherein the strangeness of the Fact lessens not the Assent to a fair Testimony given of it. For where such supernatural Events are suitable to ends aim’d at by him, who has the Power to change the course of Nature, there, under such Circumstances, they may be the Fitter to procure Belief, by how much more they are beyond, or contrary to ordinary Observation.”

Hume’s Inductive Approach

- Our confidence in testimony must be founded on experience …
- … and we find that various circumstances make a difference to its reliability, e.g. – the opposition of contrary testimony; – the character or number of the witnesses; – the manner of their delivering their testimony.
- Another factor we ought to consider is – the unusualness of the reported event.

“This contrariety of evidence … may be derived from several different causes; from the opposition of contrary testimony; from the character or number of the witnesses; from the manner of [delivery] … There are many other particulars of the same kind, which may diminish or destroy the force of … human testimony. Suppose, for instance, that the fact, which the testimony endeavours to establish, partakes of the extraordinary and the marvellous; in that case, the evidence, resulting from the testimony, admits of a diminution … in proportion as the fact is more or less unusual.” (10.7-8)

The Case of Miracles

- The crucial issue (10.11) arises when: “the fact [affirmed] … is really miraculous” but: “the testimony, considered apart and in itself, amounts to an entire proof”.
- We have “proof against proof” – one on each side of the scale – “of which the strongest must prevail, but still with a diminution of its force, in proportion to that of its antagonist.”

Earman’s Interpretation

- Fred is concerned about a genetic disease that becomes apparent only in old age, and affects one in a million of the population.
- He therefore takes a test, which has a 99.9% probability of truth and falsehood independently of the event reported.
- Call this the Independence Assumption.

Earman’s Interpretation Refuted

- Earman must be wrong, because neither side of Hume’s scale represents an overall probability judgement.
- The overall judgement instead comes from a weighing-up between the unlikelihood that testimony of this kind, considered apart and in itself, should be false and the unlikelihood of the reported event.

The Diagnostic Example

- “Hume’s Maxim”
- “The plain consequence is (and it is a general maxim worthy of our attention), ‘That no testimony is sufficient to establish a miracle, unless the testimony be of such a kind, that its falsehood would be more miraculous, than the fact, which it endeavours to establish …’”
- … And even in that case, there is a mutual destruction of arguments, and the superior only gives us an assurance suitable to that degree of force, which remains, after deducting the inferior.” (10.13)

In favour of the testimony

Character of the witnesses

Number of the witnesses

Manner of delivery

Against the testimony

Unusualness of the event

Enquiry Section 10 Part 2

- Hume’s maxim does not rule out the very possibility of testimony establishing a miracle, but the hurdle is very high!
- In Part 2, he points out reasons why religious testimony is particularly unlikely to do the job:
  - It tends to be transmitted from remote places and unscientific, unscientific witnesses;
  - People have a love of wonder and a tendency to lie or deceive themselves in religious matters;
  - There are lots of religious claiming different miracles against each other.

Earman’s (Mis)interpretation

Probability that the event happened given the testimony

Probability that the event didn’t happen given the testimony

Credibility

Nature and other circumstances.

Hume seems to be assuming that different “kinds” of testimony (specified in terms of the character and number of the witnesses, the consistency, and manner of delivery etc.) carry a different typical probability of truth and falsehood

supernatural Events are suitable to ends aim’d at by him, who has the Power to change the course of Nature, there, under such Circumstances, they may be the Fitter to procure Belief, by how much more they are beyond, or contrary to ordinary Observation.”

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Earman and the Diagnostic Test
- Probability of disease = 1 in 10,000,000
- Probability of false test = 1 in 1,000
- Hume asks: “Would the falsehood of the test be more surprising than your having the disease?”
- Earman would have Hume asking: “Having had a positive test, are you more likely to have the disease than not to have it?”

Vindicating Hume Mathematically
- We have seen that the overall judgement instead comes from a weighing-up between the likelihood that testimony of this kind, considered apart and in itself, should be false and the unlikelihood of the reported event.
- If we presuppose the independence assumption discussed earlier, then this enables us to treat the issue mathematically.

Deriving Hume’s Maxim
- A report that M occurred is more likely to be a “true positive” than a “false positive” if and only if:
  - \( f(1 - m) < \alpha(1 - f) \)
  - \( m < f \)
  - \( f \leq \alpha \)
- I.e., the falsehood of the testimony, considered apart and in itself, is more miraculous (less probable) than the event reported, considered independently of the testimony. This is, more or less exactly, Hume’s Maxim!

Bayes’ Theorem
- Hume’s result anticipates Bayes Theorem: the probability of hypothesis H given evidence E is proportional to the initial probability of H (so the more improbable H is to start with, the more impressive the evidence E has to be to make it credible).
  - \( Pr(H \text{ given } E) = \frac{Pr(H) \times Pr(E \text{ given } H)}{Pr(E)} \)

Hume’s Route to His Result?
- Testimony is true
- Miracle occurs probability \( m \)
- Miracle does not occur probability \( 1 - m \)
- Testimony false probability \( f \)
- \( M \text{ occurred} \)
- \( M \text{ occurred} \) \( \alpha(1 - f) \)
- \( M \text{ occurred} \)
- \( M \text{ occurred} \) \( (1 - m)(1 - f) \)
- \( M \text{ denies} \)
- \( M \text{ denies} \) \( m \)
- \( M \text{ denies} \)
- \( M \text{ denies} \) \( (1 - m)(1 - f) \)
- \( M \text{ asserts} \)
- \( M \text{ asserts} \) \( \alpha \)
- \( M \text{ asserts} \)
- \( M \text{ asserts} \) \( f(1 - m) \)

The Doubtfulness of Religiously Motivated Testimony.
- When the sensation is religious:
  - “But if the spirit of religion join itself to the love of wonder, there is an end of common sense; and human testimony, in these circumstances, loses all pretensions to authority. A religionist may be an enthusiast, and imagine he sees what has no reality: He may know his narrative to be false, and yet persevere in it, with the best intentions in the world, for the sake of promoting so holy a cause…”

Does Hume Himself Believe the Independence Assumption?
- In Enquiry 10 Part 2, Hume suggests that sensational testimony is especially suspect:
  - “The passion of surprise and wonder, arising from miracles, being an agreeable emotion, gives a sensible tendency towards the belief of those events, from which it is derived. And [people] love to partake of the satisfaction at second-hand [by reporting miracles] … and delight in exciting the admiration of others.”

Earman’s interpretation of Hume is certainly incorrect, as are his main criticisms. Likewise the popular “deductive” parody of Hume.
- Good sense can be made of Hume’s argument, and his main point is absolutely right: we should take account of prior probabilities.
- On an Assumption of Independence, Hume’s maxim can be justified by Bayesian reasoning.
- But the Assumption is questionable, so there’s much more to be said and debated here…