The design argument

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April 17, 2014

1. PALEY'S VERSION OF THE DESIGN ARGUMENT

The selection from Paley begins with the posing of a problem:

> "In crossing a heath, suppose I pitched my foot against a stone, and were asked
> how the stone came to be there, I might possibly answer that, for anything I
> knew to the contrary, it had lain there for ever; . . . But suppose that I had found
> a watch upon the ground, and it should be inquired how the watch happened to
> be in that place, I should hardly think of the answer which I had before given –
> that, for anything I knew, the watch might have always been there. Yet why
> should not this answer serve for the watch as well as for the stone?"

Paley immediately offers an answer:

> "For this reason, and for no other . . . when we come to inspect the watch, we
> perceive (what we could not discover in the stone) that its several parts are
> framed and put together for a purpose."

Paley then goes on to describe the ways in which the parts of the watch serve the purpose
of keeping time, and illustrates the point that had even one part been slightly different,
the watch would not have served this purpose. Having described this, he then goes on to
conclude:

> "This mechanism being observed ...the inference, we think, is inevitable, that the
> watch must have had a maker: that there must have existed, at some time, and
> at some place or other, an artificer or artificers who formed it for the purpose
> which we find it actually to answer; who comprehended its construction, and
> designed its use."

Paley goes on to claim that we would make this inference even if the watch occasionally malfunctioned, if there were parts of it we could not understand, if we had never seen a watch before, etc. Paley concludes that it would be irrational to observe the watch and not infer that it had an intelligent maker. "Yet," he concludes,

> "This is atheism: for every indication of contrivance, every manifestation of design, every which existed in the watch, exists in the works of nature; with the difference, on the side of nature, of being greater and more, and that in a degree which excels all computation."

The conclusion, Paley thinks, is obvious: just as we should conclude that the watch was created by an intelligent designer, so we should conclude that the world was created by an intelligent designer. To be an atheist is to commit the same kind of mistake as is made by someone who finds a watch on the heath, and concludes that it has always been there.

2. INFERENCE TO THE BEST EXPLANATION

Let's think more about how, exactly, Paley's argument should be understood. On one plausible interpretation, it employs a form of inference known as *inference to the best explanation.*

We have seen that to say that an argument is valid is to say that the truth of the premises guarantees the truth of the conclusion: it is impossible for the premises to be true and the conclusion false. But consider the kind of argument that Paley seems to be giving:

1. The watch is so constructed that each of its parts serves the purpose of the watch.
2. The best explanation of the fact that the watch is so constructed that each of its parts serves the purpose of the watch is that the watch had an intelligent designer.
C. The watch had an intelligent designer.

Is this argument valid? Does this show that there is something wrong with Paley's argument, or that some arguments can be good without being deductively valid?

The role of inference to the best explanation in science.

3. PROBABILITIES OF FACTS GIVEN HYPOTHESES

Let's look a bit more closely at premise (2) in the above argument for the conclusion that the watch had an intelligent designer. What makes it the case that this is a better explanation of the existence of the watch than an explanation which attributes the existence of the watch to a series of more or less random natural events? After all, it is surely possible that the watch could have come to be as a result of such a process.

The natural thought here is something like this: the existence of a watch designer somehow makes sense of the existence of the watch, in the sense that, if there is a watch designer, the existence of the watch is very unsurprising. On the other hand, if there were no watch designer, then the existence of the watch would be extremely surprising; if there were no watch designer, we certainly would not expect watches to appear in the middle of heaths for no reason.

This idea can be made a bit more precise using the notion of the probability of an observed fact given a hypothesis. Given some hypothesis h and some observed fact f, we can ask: how likely would it be that f would occur, given than h is true?

The following example might make things clearer. Suppose that I flip a coin 10 times, and it comes up heads all 10 times. Let this series of coin flips be the observed fact. Now consider two candidate hypotheses:

h_1: I am flipping a fair coin.
h_2: I am flipping a coin which is weighted so as to come up heads every time.

It seems pretty clear that the observed coin flips favor h_2. Here's one plausible (rough) explanation why:

If h_1 were true, then the chances of that series of coin flips happening would be $1/1024$, or 0.097%.

If h_2 were true, then the chances of that series of coin flips happening would be $1/1$, or 100%.

Another way to put this is as follows:

The probability of that series of coin flips given h_1 is .00097.
The probability of that series of coin flips given h_2 is 1.

If this explains, as it seems to, why the coin flips favor the hypothesis of the weighted coin, then it seems like we have a reason to adopt the following general principle:

The principle of confirmation
If we have two hypotheses and there is some fact such that the probability of that fact given the first hypothesis is larger than the probability of that fact given the second hypothesis, then, all things being equal, the first hypothesis is a better explanation of that fact than the second hypothesis.

Why the 'all things being equal' qualifier is needed.

To see why this might seem to support the design argument, compare:

The probability of the existence of the watch on the heath given that there was a watchmaker.

The probability of the existence of the watch on the heath given that there was no watchmaker.

and, more importantly:

The probability of the existence of the 'works of nature' given that there was an intelligent designer of them.

The probability of the existence of the 'works of nature' given that there was no intelligent designer of them.

4. AN EVOLUTIONARY OBJECTION

A natural response to this argument at this point is to grant the point about the connection between probabilities and best explanations, but to question whether it really applies to the case we are interested in, that of the works of nature and their explanation in terms of an intelligent designer. In a discussion which goes beyond the selection assigned for class, Paley discusses the design of the eye, and how it is more finely tuned and well suited for its function than even a watch. But can't we explain the design of the eye in terms of the theory of natural selection, without ever mentioning an intelligent designer of the eye? Here is what Darwin says about that example:

It is scarcely possible to avoid comparing the eye with a telescope. We know that this instrument has been perfected by the long-continued efforts of the highest human intellects; and we naturally infer that the eye has been formed by a somewhat analogous process. But may not this inference be presumptuous? Have we any right to assume that the Creator works by intellectual powers like those of man? If we must compare the eye to an optical instrument, we ought in imagination to take a thick layer of transparent tissue, with spaces filled with fluid, and with a nerve sensitive to light beneath, and then suppose every part of this layer to be continually changing slowly in density, so as to separate into layers of different densities and thicknesses, placed at different distances from each other, and with the surfaces of each layer slowly changing in form. Further we must suppose that there is a power, represented by natural selection or the survival of the fittest, always intently watching each slight alteration in the transparent layers; and carefully preserving each which, under varied circumstances, in any way or in any degree, tends to produce a distincter image. We must suppose each new state of the instrument to be multiplied by the million; each to be preserved until a better one is produced, and then the old ones to be all destroyed. In living bodies, variation will cause the slight alterations, generation will multiply them almost infinitely, and natural selection will pick out with unerring skill each improvement. Let this process go on for millions of years; and during each year on millions of individuals of many kinds; and may we not believe that a living optical instrument might thus be formed as superior to one of glass, as the works of the Creator are to those of man?

Suppose that what Darwin says here is true. Why exactly would this pose a problem for Paley's version of the design argument?

(Note the difference between the claim that the theory of evolution refutes one argument for God's existence, and the claim that it shows that God does not exist.)

5. THE 'FINE-TUNING' ARGUMENT

Darwin is often taken to have refuted the design argument. But contemporary versions of the argument from design are constructed to be immune from this kind of objection.

It is easy to see what the strategy for developing those arguments should be. The objection considered above does not question the sort of reasoning which is at work in the design argument; it only questions whether the natural phenomena on which Paley focused are better explained by the hypothesis of an intelligent designer than by the theory of evolution. What is needed is to find some kind of natural phenomenon which can be explained by positing an intelligent designer, and cannot be explained by the theory of evolution or any other scientific theory.

Some have focused in this connection on the example of the "fine-tuning of the universe." In the reading for today, the physicist Martin Rees discusses six constants which figure in the fundamental laws of nature. Here is one of them:

The cosmos is so vast because there is one crucially important huge number N in nature, equal to 1,000,000, 000,000,000,000,000,000,000,000,000. This number measures the strength of the electrical forces that hold atoms together, divided by the force of gravity between them. If N had a few less zeros, only a short-lived miniature universe could exist: no creatures could grow larger than insects, and there would be no time for biological evolution.

About these numbers, Rees says

These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: if any one of them were to be 'untuned', there would be no stars and no life. Is this tuning just a brute fact, a coincidence?

Using the way of developing the design argument above, we can ask: what is the probability that these physical constants should have obtained given that there is no intelligent designer? What is the probability given that there is an intelligent designer?

How might the answer to these questions be turned into an argument for God's existence which makes use of the principle of confirmation?

How our prior beliefs about the existence of God are relevant to this argument

An objection to the fine-tuning argument (which Rees endorses): the multiverse.