

Excerpt from *Natural Theology*

by William Paley

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STATE OF THE ARGUMENT

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 forever; nor would it, perhaps, be very easy to show the absurdity of this answer. But suppose 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; why is it not admissible in the second case as it was in the first? For this reason, and for no other, namely, that 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, e.g., that they are so formed and adjusted as to produce motion, and that motion so regulated to point out the hour of the day; that if the different parts had been differently shaped from what they are, or placed after any other manner or in any other order than that in which they are placed, either no motion at all would have answered the use that is now served by it. This mechanism being observed—it requires indeed an examination of the instrument, and perhaps some previous knowledge of the subject, to perceive and understand it; but being once, as we have said, observed and understood—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 [designer] or artificers who formed it for the purpose which we find it actually to answer, who completely comprehended its construction and designed its use.

APPLICATION OF THE ARGUMENT

Contrivances [designs] of nature surpass the contrivances of art in complexity, subtlety, and curiosity of the mechanism; and still more, if

possible, do they go beyond them in number and variety; yet, in a multitude of cases, are not less evidently mechanical, not less evidently contrivances, not less evidently accommodated to their end or suited to their office than are the most perfect productions of human ingenuity.

I know no better method of introducing so large a subject than that of comparing a single thing with a single thing: an eye, for example, with a telescope. As far as the examination of the instrument goes, there is precisely the same proof that the eye was made for vision as there is that the telescope was made for assisting it. They are made upon the same principles, both being adjusted to the laws by which the transmission and refraction of rays of light are regulated. I speak not of the origin of the laws themselves; but such laws being fixed, the construction in both cases is adapted to them. For instance, these laws require, in order to produce the same effect, that rays of light in passing from water into the eye should be refracted by a more convex surface than when it passes out of air into the eye. Accordingly, we find that the eye of a fish, in that part of it called the crystalline lens, is much rounder than the eye of terrestrial animals. What plainer manifestation of design can there be than this difference? What could a mathematical instrument maker have done more to show his knowledge of his principle, his application of that knowledge, his suiting of his means to his end—I will not say to display the compass or excellence of his skill and art, for in these all comparison is indecorous, but to testify counsel, choice, consideration, purpose?

To some it may appear a difference sufficient to destroy all similitude between the eye and the telescope, that the one is a perceiving organ, the other an unperceiving instrument. The fact is they are both instruments.

But, up to the limit, the reasoning is as clear and certain in the one case as in the other. In the example before us it is a matter of certainty, because it is a matter which experience and observation demonstrate, that the formation of an image at the bottom of the eye is necessary to perfect vision. The formation then of such an image being necessary—no matter how—to the sense of sight and the exercise of that sense, the apparatus by which it is formed is constructed and put together not only with infinitely more art, but upon the selfsame principles of art as in the telescope or the camera obscura. The perception arising from the image may be laid out of the question; for the production of the image, these are instruments of the

same kind. The end is the same, the means are the same. The purpose in both is alike, the contrivance [design] for accomplishing that purpose is in both alike. The lenses of the telescopes and humors of the eye bear a complete resemblance to one another, in their figure, their position, and in their power over the rays of light, namely in bringing each pencil to a point at the right distance from the lens; namely in the eye, at the exact place where the membrane is spread to receive it. How is it possible, under circumstances of such close affinity, and under the operation of equal evidence, to exclude contrivance [invention] from the one, yet to acknowledge the proof of contrivance having been employed, as the plainest and clearest of all propositions, in the other?

Observe a newborn child first lifting up its eyelids. What does the opening of the curtain discover? The anterior part of two pellucid [transparent] globes, which, when they come to be examined, are found to be constructed upon strict optical principles—the selfsame principles upon which we ourselves construct optical instruments. We find them perfect for the purpose of forming an image by refraction, composed of parts executing different offices, one part having fulfilled its office upon the pencil of light, delivering it over to the action of another part, that to a third, and so onward: the progressive action depending for its success upon the nicest and minutest adjustment of the parts concerned, yet these parts so in fact adjusted as to produce, not by a simple action or effect but by a combination of actions and effects, the result which is ultimately wanted. And forasmuch as this organ would have to operate under different circumstances with strong degrees of light and with weak degrees upon near objects and upon remote ones, and these differences demanded, according to the laws by which the transmission of light is regulated, a corresponding diversity of structure—that the aperture [opening], for example, through which the light passes should be larger or less, the lenses rounder or flatter, or that their distance from the tablet upon which the picture is delineated should be shortened or lengthened—this I say, being the case, and the difficulty to which the eye was to be adapted, we find its several parts capable of being occasionally changed, and a most artificial apparatus provided to produce that change. This is far beyond the common regulator of a watch, which requires the touch of a foreign hand to set it; but it is not altogether unlike Harrison's contrivance for making a watch regulate itself, by inserting within it a machinery which, by the artful use of the different expansion of

metals, preserves the equability of the motion under all the various temperatures of heat and cold in which the instrument may happen to be placed. The ingenuity of this last contrivance [invention] has been justly praised. Shall, therefore, a structure which differs from it chiefly by surpassing it be accounted no contrivance at all; or, if it be a contrivance, that it is without a contriver [inventor]?

To the marks of contrivance discoverable in animal bodies, and to the argument deduced from them in proof of design and of a designing Creator, this turn is sometimes attempted to be given, namely, that the parts were not intended for the use, but that the use arose out of the parts. This distinction is intelligible. A cabinetmaker rubs his mahogany with fish skin; yet it would be too much to assert that the skin of the dogfish was made rough and granulated on purpose for the polishing of wood, and the use of cabinetmakers. Therefore the distinction is intelligible. But I think that there is very little place for it in the works of nature. []

All that there is of the appearance of reason in this way of considering the subject is that, in some cases, the organization seems to determine the habits of the animal and its choice to a particular mode of life which in a certain sense may be called “the use arising out of the part.” Now, to all the instances in which there is any place for this suggestion, it may be replied that the organization determines the animal to habits beneficial and salutary to itself, and that this effect would not be seen so regularly to follow, if the several organizations did not bear a concerted and contrived relation to the substance by which the animal was surrounded. They would, otherwise, be capacities without objects—powers without employment. The webfoot determines, you say, the duck to swim; but what would that avail if there were no water to swim in? The strong hooked bill and sharp talons of one species of bird determine it to prey upon animals; the soft straight bill and weak claws of another species determine it to pick up seeds; but neither determination could take effect in providing for the sustenance of the birds, if animal bodies and vegetable seeds did not lie within their reach. The peculiar conformation of the bill and tongue and claws of the woodpecker determines that bird to search for his food among the insects lodged behind the bark or in the wood of decayed trees; but what would this profit him if there were no trees, no decayed trees, no insects lodged under their bark or in their trunk? The proboscis with which the bee is furnished determines him to seek for honey; but what would that signify

if flowers supplied none? Faculties thrown down upon animals at random, and without reference to the objects amidst which they are placed, would not produce to them the services and benefits which we see; and if there be that reference, then there is intention.

Lastly, the solution fails entirely when applied to plants. The parts of plants answer their uses without any concurrence from the will of the plant.

CONCLUSION

The existence and character of the Deity is, in every view, the most interesting of all human speculations. In none, however is it more so than as it facilitates the belief of the fundamental articles of revelation. It is a step to have it proved that there must be something in the world more than what we see. It is a further step to know, that among the invisible things of nature there must be an intelligent mind concerned in its production, order, and support. These points being assured to us by natural theology, we may well leave to revelation the disclosure of many particulars which our research cannot reach respecting either the nature of this Being as the original cause of all things, or his character and designs as a moral governor; and not only so, but the more full confirmation of other particulars, of which, though they do not lie altogether beyond our reasonings and our probabilities, the certainty is by no means equal to the importance. The true theist will be the first to listen to any credible communication of divine knowledge. Nothing which he has learnt from natural theology will diminish his desire of further instruction, or his disposition to receive it with humility and thankfulness. He wishes for light, he rejoices in light. His inward veneration of this great Being will incline him to attend with the utmost seriousness, not only to all that can be discovered concerning him by researches into nature, but to all that is taught by a revelation which gives reasonable proof of having proceeded from him.

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