

## *Paley's Inductive Inference to Design* A Response to Graham Oppy

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In a recent article, Graham Oppy offers a lucid and intriguing examination of William Paley's design argument.<sup>1</sup> Oppy sets two goals for his article. First, he sets out to challenge the "almost universal assumption" that Paley's argument is inductive by revealing it actually to be a deductive argument. Second, he attempts to expose Paley's argument as manifestly poor when interpreted in this way. I will argue that Oppy is unsuccessful in accomplishing his first goal, leaving his second goal quite irrelevant. Contrary to Oppy's interpretation, Paley's argument is best interpreted as an inference to the best explanation.

### I

Oppy interprets Paley's argument for design as the following deductive argument:

- (1) There are cases in which the presence of function and suitability of constitution to function makes it inevitable that we infer to intelligent design [premise].
- (2) In general, the presence of function and suitability of constitution to function guarantees a role for intelligent design [from 1].
- (3) There is a function and suitability of constitution to function in the natural world [premise].
- (4) Hence, the natural world is the product of intelligent design [from 2, 3].<sup>2</sup>

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<sup>1</sup> Graham Oppy, "Paley's Argument for Design," *Philo* 5 (2002): 161–73.

<sup>2</sup> *Ibid.*, 166–7.

This argument is deductively valid; if (2) and (3) are both true, then (4) follows inescapably. (3) is clearly true; various parts of the natural world (for example, Oppy's example of a rabbit's heart<sup>3</sup>) do have a function. Accordingly, Oppy accepts (3). In evaluating (2), Oppy allows the move from (1) to (2) although he does point out: "There is some murkiness involved in the inference."<sup>4</sup> For Oppy, (2) thus follows from (1), and so he turns to critique (1). Appraising this premise, Oppy examines two main passages from Paley's *Natural Theology* (*NT*), in which Paley implies that his famous watch example represents the type of case spoken of in (1).<sup>5</sup> Oppy concludes that there are at least two significant problems with (1) when applied to the case of the watch: first, considerations of function do not seem to play the main role in making an inference to design inevitable. Oppy avers, ". . . [T]here are other more immediate things [such as brass, smooth glass, and cogwheels] that we see when we inspect the watch that will make the 'inference' to design inevitable."<sup>6</sup> Second, Oppy doubts that function and suitability of constitution to function—considered apart from "more immediate things"—could be sufficient to allow for an inference to design in the watch case. Given both of these alleged problems with (1), Oppy rejects this premise, and accordingly condemns the deductive argument to the ranks of the "manifestly poor."

Granting Oppy his evaluation of the deductive argument, the key question for evaluating the success of Oppy's project is hermeneutical. If Oppy is correct, one should read Paley's argument as deductive. But does Oppy interpret Paley accurately? In seeking to answer this question, we should note—as Oppy himself does—that Paley does not explicitly tell his readers what argument form he uses. Apparently Oppy claims that Paley's argument is deductive because he believes that Paley holds (1) and that Paley infers (2) from (1). Consequently, it is crucial to investigate Oppy's justification for these beliefs.

### *Does Paley Believe Premise (1)?*

In the famous opening discussion of *NT*, Paley claims that an inference to design after inspecting a watch is admissible.

For this reason, and for no other, viz. that, when we come to inspect the watch, we perceive . . . that its several parts are framed and put together for a purpose . . . This mechanism being observed . . . the inference, we think, is *inevitable*; that the watch must have had a

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<sup>3</sup> Ibid., 163.

<sup>4</sup> Ibid., 167.

<sup>5</sup> William Paley, *Natural Theology*, new ed. (Boston: Gould and Lincoln, 1856).

<sup>6</sup> Oppy, "Paley's Argument for Design," 163.

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.<sup>7</sup>

In this passage, Paley clearly says that the presence of function and suitability of constitution to function make an inference to design in the case of the watch “inevitable,” which seems to be premise (1). But what does Paley mean by “inevitable?” According to the typical definition, an “inevitable” inference is simply one that cannot be avoided. But because both inductive and deductive arguments may be robust, an inference based on either may be “inevitable.” So there is no reason to suggest that Paley is arguing deductively in the case of the watch because of his belief in (1).

However, Oppy believes that Paley means something stronger when he uses the word “inevitable.” Oppy claims that Paley ultimately reasons in the following way:

. . . [I]f it really is the case that it is the presence of function and suitability of constitution to function that makes the inference to design in the case of the watch *inevitable*, then we should agree that it is *necessarily* the case that where there is function and suitability of constitution to function, so too there is intelligent design.<sup>8</sup>

Similarly, Oppy writes:

If the inference to intelligent design, in the case of the watch, is both correct and *inevitable*, then the observations that support that inference must provide a *logical guarantee* for the correctness of that inference. Hence, it must be that, *necessarily*, where there is function and suitability of constitution to function, there is intelligent design.<sup>9</sup>

Here, Oppy clarifies his belief that Paley equates inevitability with necessity. Using possible worlds semantics, Oppy alleges that Paley uses the term “inevitable” to mean something like “unshakeable by any evidence acquirable in any possible world.” (Hereon, I will use the designation “inevitable<sub>2</sub>” to refer to this special definition of “inevitable.” Additionally, I will refer to premise (1) as (1)<sub>2</sub> when this premise refers to inevitable<sub>2</sub>.)

If the inference from function to design is inevitable<sub>2</sub>, then (1)<sub>2</sub> by itself presents a convincing case that Paley is arguing deductively.<sup>10</sup> An inevitable<sub>2</sub> inference is one that is monotonic (that is, the valid inference remains valid regardless of what evidence may possibly come along) and

<sup>7</sup> Paley, *Natural Theology*, 5–6 (emphasis mine).

<sup>8</sup> Oppy, “Paley’s Argument for Design,” (emphasis his).

<sup>9</sup> *Ibid.*, 173 (emphasis mine).

<sup>10</sup> At least this is true in those cases to which premise (1)<sub>2</sub> refers.

this concept only relates to deductive arguments. Accordingly, if Paley believes (1)<sub>2</sub>, then we have solid evidence that he means his argument to be deductive for those cases to which this premise refers. Unfortunately for Oppy, Paley says nothing explicitly to suggest that he means inevitable<sub>2</sub>. In fact, as I hope to show, a close look at *NT* reveals that this *cannot* be the case. Thus, there is no clear reason to think that Paley believes (1)<sub>2</sub>. So the reader is left to assume that Paley simply uses the word “inevitable” in the typical sense. In this case, even if Paley believes (1), this fact does not imply that his argument is deductive.

### *Does Paley Infer (2) From (1)?*

Paley never explicitly claims to believe (2). Thus, Oppy argues: “Paley means to show that we rely on (2) as an enthymeme.”<sup>11</sup> In order to show that Paley does make the implicit inference from (1) to (2), Oppy attempts to show that (2) logically follows from (1) such that, if Paley does indeed believe (1) and is logical, he must also believe (2)—even if he never explicitly states such belief. Oppy admits however that there is some “murkiness” involved in such an inference. The reason for this murkiness is obvious if Paley merely believes (1)—and not (1)<sub>2</sub>. In this case, the inference is murky because (1) and (2) make dramatically different claims that are not necessarily inferentially related at all. While (2) is an attempt to describe a universally sufficient condition *for design*, (1) tries to describe a sufficient criterion *for inferring design* in only some cases.<sup>12</sup> Thus, (1) is a meta-level, epistemological claim about how one can be justified in believing something to be designed, whereas (2) is an object-level, metaphysical statement to the effect that if an object has a particular property, it must be designed. Also, while (2) is a statement about a *universally* sufficient condition for design, (1) is a statement about a sufficient criterion for inferring design in some specific circumstances for specific objects. It would be perfectly consistent for Paley to believe that considerations of function may constitute sufficient evidence for an inference to design in some cases, while also believing that considerations of function are not universally sufficient conditions for design. Therefore, although Paley clearly believes (1), there is still no good reason to assume that Paley infers (2) from (1).

<sup>11</sup> Oppy, “Paley’s Argument for Design,” 168.

<sup>12</sup> The introductory phrasing to (2)—“In general”—leaves the reader wondering whether Oppy intends to claim that Paley is describing a universally sufficient condition for design. Yet the word “guarantees” and the following quote, occurring two paragraphs later, suggests this: “. . . [I]f it really is the case that it is the presence of function and suitability of constitution to function that makes the inference to design in the case of the watch inevitable, then we should agree that it is necessarily the case that where there is function and suitability of constitution to function, so too there is intelligent design.”

Trying to relieve the inference from (1) to (2) of “murkiness,” Oppy offers the following further reasoning between (1) and (2):

- (A) The inference to intelligent design, in the case of the watch, is inevitable.
- (B) The inference to intelligent design, in the case of the watch, is based on the observation of function and suitability of constitution to function.
- (C) If the inference to intelligent design, in the case of the watch, is both correct and inevitable, then the observations that support that inference must provide a logical guarantee for the correctness of that inference.
- (D) Hence, it must be that, necessarily, where there is function and suitability of constitution to function, there is intelligent design.<sup>13</sup>

Here, Oppy is again assuming that Paley means inevitable<sub>2</sub> when he uses the word “inevitable” in premises (A) and (C). If so, then Oppy’s argument makes sense, and Paley is making valid deductive inferences from (A) through (D). The crucial premise here is (C) which simply relies on the concept of inevitable<sub>2</sub> in order to validate the inference to (D). Therefore, the question again reduces to what Paley means by “inevitable.” As has been noted, there is no clear reason to think that Paley means inevitable<sub>2</sub> when he uses “inevitable.” Consequently, there is little reason to believe that Oppy’s reconstruction in (A) through (D) accurately captures Paley’s argument.

## II

We have seen that conclusive evidence is lacking for Oppy’s claim that Paley intends to present a deductive argument. This is partially because, as Oppy admits, Paley’s precise meaning in *NT* is sometimes unclear.<sup>14</sup> In light of this, it is helpful to obey some basic rules of hermeneutics in determining the best interpretation. Two such rules are (1) interpret unclear passages in light of clearer ones and (2) interpret unclear passages in light of the larger project of which they are a part. As I hope to show in this section, if the reader follows these principles, he will not conclude that Paley is offering a deductive argument; Oppy’s interpretation finds little support from clearer texts and from *NT* in its entirety. On the contrary, at least three ideas repeated throughout *NT* strongly suggest that Paley is offering an inference to the best explanation.

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<sup>13</sup> Oppy, “Paley’s Argument for Design,” 173.

<sup>14</sup> “It can’t be said that Paley’s discussion is entirely clear” (Oppy, “Paley’s Argument for Design,” 162).

First, Paley indicates that one ought to begin an investigation such as his own by observing nature and accumulating evidence in need of explanation. In discussing his methodology, Paley writes, “. . . [W]e view the products of nature. We observe them also marked and distinguished . . . by certain properties such as relation to an end, relation of parts to one another, and to a common purpose. . . . We wish to account for their origin.”<sup>15</sup> In any inference to the best explanation, this accumulation of evidence is a first step that determines the direction of one’s future inferences: from evidence to potential explanations.

Second, there are numerous clear passages in *NT* where Paley compares the explanatory power (that is, the ability to explain and predict relevant evidence) of a particular hypothesis to that of another hypothesis. Thus, Paley introduces an alternative hypothesis to theistic design:

One atheistic way of replying to our observations upon the works of nature, and to the proofs of a Deity which we think that we perceive in them, is to tell us, that all which we see must necessarily have had some form, and that it might as well be its present form as any other. Let us now apply this answer to the eye, as we did before to the watch. . . .<sup>16</sup>

After evaluating the explanatory power of this alternative hypothesis and comparing it to that of the theistic design hypothesis, Paley concludes, “I desire no greater certainty in reasoning, than that by which chance is excluded from the present disposition of the natural world. Universal experience is against it.”<sup>17</sup> Importantly, Paley only concludes this because he decides that the theistic design hypothesis constitutes a far better explanation of the evidence than does the alternative hypothesis.

Immediately following this evaluation, Paley evaluates a version of the “principle of plenitude” in order to determine its explanatory power. He concludes,

The hypothesis teaches, that every possible variety of being hath, at one time or other, found its way into existence . . . and that those which were badly formed, perished; but how or why those which survived should be cast, as we see that plants and animals are cast, into regular classes, the hypothesis does not explain; or rather, the hypothesis is inconsistent with this phenomenon.<sup>18</sup>

Paley’s argument here clearly evaluates the relative explanatory powers of various hypotheses in light of specific evidence. He rejects the “survival of the fittest” hypothesis because it “does not explain” and “is inconsistent

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<sup>15</sup> Paley, *Natural Theology*, 232.

<sup>16</sup> *Ibid.*, 37.

<sup>17</sup> *Ibid.*, 38.

<sup>18</sup> *Ibid.*, 40.

with” the evidence. Such evaluation of alternative hypotheses makes little to no sense if one interprets Paley’s argument as deductive. On Oppy’s interpretation, Paley need not evaluate the explanatory powers of various hypotheses or even consider alternative hypotheses at all. Instead, all he must do to think himself successful is show that a single part of nature has function or suitability of constitution to function.

Third, Paley seems to be inconsistent throughout *NT*: for no apparent reason, he alternates between the language of induction and the language of deduction. Paley speaks of alternate hypotheses and comparative probabilities so that it seems he must be using inference to the best explanation; however, he also refers to proofs and certainty so that the reader is left to believe that he is arguing deductively. There is actually a straightforward reason for this seeming inconsistency, which verifies that Paley’s argument must be inductive. Henry G. van Leeuwen shows that a different “theory of certainty” was recognized while Paley was writing. According to this theory, certainty is not always equivalent to absolute certainty. Instead, “certainty” describes a belief that is highly probable pending skeptical challenges.<sup>19</sup> Consequently, as with probability, certainty comes in degrees of strength. Describing this theory, Van Leeuwen writes,

To each kind of evidence an appropriate kind or level of certainty is matched. The levels of certainty range from near absolute certainty in the case of identical or self-evident propositions, to demonstrative certainty in the case of mathematical and metaphysical ones, down to the various degrees of moral certainty for the vast majority of beliefs concerning the major enterprises of life.<sup>20</sup>

Given this “theory of certainty” prevalent in Paley’s day, there is good reason to believe that Paley does *not* mean absolute certainty when he uses words such as “proof” and “certain.”

This theory of certainty is amply verified throughout much philosophical literature of the seventeenth and eighteenth centuries. For example, in *An Enquiry Concerning Human Understanding*, Hume writes,

And as a uniform experience amounts to a proof, there is here a direct and full *proof*, from the nature of the fact, against the existence of any miracle; nor can such a proof be destroyed, or the miracle rendered credible, but by an opposite proof, which is superior.<sup>21</sup>

Here, Hume is following the theory of certainty common in his day by speaking of “proof” as that which is indeed very strong, yet also fallible.

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<sup>19</sup> Henry G. van Leeuwen, *The Problem of Certainty in English Thought*, 2nd ed. (Hague, Netherlands: Martinus Nijhoff, 1970), 144.

<sup>20</sup> *Ibid.*

<sup>21</sup> David Hume, *An Enquiry Concerning Human Understanding*, ed. L. A. Selby-Bigge (Oxford: Clarendon, 1972).

Given this theory of certainty, there are two options for interpreting Paley's seemingly inconsistent language. Either he is very confused throughout *NT* or he is following the common verbiage of his day by using words like "certain" and "proof" to refer to strong inductive arguments and conclusions. Clearly, the latter option is both more gracious and more accurate.

With this hermeneutical key, one naturally concludes that Paley means his argument to be inductive. Consider this passage in which Paley summarizes the method underlying his argument:

[W]e see intelligence constantly producing effects, marked and distinguished by certain properties . . . such as relation to an end, relation of parts to one another, and to a common purpose. We see . . . nothing except intelligence producing effects so marked and distinguished. Furnished with this experience, we view the products of nature. We observe them also marked and distinguished in the same manner. We wish to account for their origin. Our experience suggests a cause perfectly adequate to this account. No experience, no single instance or example, can be offered in favor of any other.<sup>22</sup>

Here, Paley begins by noting that we learn what may count as criteria for inferring design in objects by directly observing objects intelligently designed presumably by humans. Paley does not wish to define any sufficient conditions for design or any *sufficient* criteria for inferring design; rather, because he begins his list of indicators with "such as . . ." he seems to want to list three such indicators as examples of what may count as evidence for design. He proceeds by noting that we first investigate and observe nature. Through such observation, much of the same evidence that justified an inference to design in those objects designed by humans appears also in natural objects. Upon finding that there are such occurrences, we evaluate various alternate hypotheses or explanations of the evidence. That hypothesis that best explains and predicts the evidence is the most probable among the alternatives.

Aside from these specific quotations, one finds additional reason for interpreting Paley's argument to be inductive through the general structure of *NT* in its entirety. In a way, the entire book forms one long inference to the best explanation taking the same form as the above paragraph describes. The first two chapters offer a statement of the argument for design regarding an object that is designed by humans: a watch. In doing so, these chapters serve at least two purposes. First, they offer an example of what types of indicators often lead us to infer that an object is designed. Second, they demonstrate the general efficacy of the adopted inductive argument as Paley systematically rules out various alternative explanations of how the watch

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<sup>22</sup> Paley, *Natural Theology*, 232.

may have been formed. Elliott Sober links the first two chapters of *NT* to the rest of the book in this way:

Paley says that the design hypothesis is far better supported by the watch's observable characteristics [than the "randomness hypothesis"]. He then says to the reader: If you agree with this assessment of the two hypotheses about the watch, you should draw a similar conclusion about the complexity and adaptedness of living things. In both cases, the design hypothesis is far more plausible than the randomness hypothesis.<sup>23</sup>

In the remainder of the book, Paley inspects nature and finds certain evidences in this realm. Moving briskly through a massive amount of information, Paley attempts to add evidence upon evidence from various objects in nature for which any adequate hypothesis must be able to account. Programmatically, he evaluates the explanatory powers of various hypotheses and concludes that, in each case, the intelligent design hypothesis best explains the evidence. Thus, throughout the book Paley is using inference to the best explanation to argue for design.

Oppy considers the structure of *NT* in his article. To retain his interpretation of Paley's argument, Oppy must reject the idea that Paley is building his evidence for design through his observations of nature. Instead, Oppy asserts that this large majority of *NT* is "intended to show just how stupid atheists are."<sup>24</sup> Not only is this interpretation of Paley unlikely—in light of the evidence presented above—but it is extremely uncharitable. Interpreting Paley's argument according to the entire text of *NT* and according to clear statements of method therein—as opposed to interpreting Paley according to a few passages that allow for multiple readings—the most hermeneutically sound and charitable interpretation is to read his argument as an inference to the best explanation.

### III

Besides the two interpretive rules discussed in the previous section, a third hermeneutical principle, the principle of charity, proves helpful here. This principle states that, when a text allows for alternate interpretations, one should ascribe to a writer the strongest argument that can reasonably be construed from his words, given that writer's situation. Since the texts Oppy uses to defend his interpretation admit of an alternate reading—upon which, as will be shown, Paley is offering a more plausible argument—it is ungracious to insist that Paley must be offering the weaker deductive argument.

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<sup>23</sup> Elliott Sober, *Philosophy of Biology* (Boulder, CO: Westview Press, 1993), 31.

<sup>24</sup> Oppy, "Paley's Argument for Design," 170.

Given the principle of charity, we ought to interpret Paley's argument to be inductive, if for no other reason, because his argument is otherwise hopeless.

Oppy does investigate the claim that it is more charitable to read Paley's argument as an inference to the best explanation. However, he offers two reasons why this principle does not save Paley's argument from being read as deductive: first, Oppy maintains that the text of *NT* does *not* allow for alternate interpretations. He claims that the text leans heavily in favor of his interpretation so that the alternate interpretation departs too far from Paley's work. As has been argued here, in light of some clear statements from Paley and in light of *NT* in its entirety, this first reason seems mistaken. Second, Oppy argues that, even when interpreted as an inference to the best explanation, the argument is not stronger anyway; thus, it is not a more charitable reading at all. Oppy sets up the following example of what such an inductive argument might look like.<sup>25</sup>

- (1) The natural world contains function and suitability of constitution to function [premise].
- (2) This fact is well-explained if we and the world are the product of intelligent design [premise].
- (3) There is no other explanation of this fact that is anywhere near as good [premise].
- (4) (Hence) Probably, we and the world are the product of intelligent design [from 1, 2, and 3].
- (5) If we and the world are the product of intelligent design, then we and the world are the work of God [premise].
- (6) If we and the world are the work of God, then God exists [premise].
- (7) Probably, God exists [from 4, 5, and 6].

Oppy offers two serious objections to this inductive argument. First, he offers the following reason—initially given by Hume—for rejecting premise (2): “If we must postulate (just as much?) unexplained function and suitability of constitution to function in the designer, then there is no explanatory progress—and hence, arguably, there is no good explanation at all.”<sup>26</sup> The relevant claim here to the hermeneutical purpose of Oppy's article is something like the following: It is not more charitable to interpret Paley's argument as the above inductive argument because, at the time Paley wrote *NT*, Hume had already given this critique of premise (2). Oppy assumes here that Paley must have believed Hume's criticism to be devastating to (2).

In responding to this claim, it is important to remember that particular notions of divine necessity and simplicity preceded both Hume and Paley.

<sup>25</sup> Ibid., 168.

<sup>26</sup> Ibid., 169.

In light of these additional relevant considerations, it is far from obvious that Paley would have had to consider Hume's argument to be seriously damaging to premise (2). For example, with the tools that Paley had to work with in his time, he may have reasoned against Hume along the following lines: Hume's reasoning fails because the very concept of God entails that, if he exists, then he is the type of being that necessarily must exist the way he does. That is, God could not possibly not be who he is, and there can hardly be a better explanation for why God contains function and suitability of constitution to function than the fact that God could not possibly not contain such things. Consequently, the function and suitability of constitution to function in God are not "unexplained" as Hume asserts.

Oppy's second objection to the inductive argument rejects (3). He writes, "[I]t is not clear that there is no other explanation of the appearance of function and suitability of constitution to function in the natural world that does about as well as the appeal to intelligent design. To start with, there is evolutionary theory."<sup>27</sup> In evaluating Oppy's second objection, it is crucial first to remember that he is ultimately trying to respond to an interpretive claim: the claim that it is more charitable to read Paley's argument as an inference to the best explanation. Given this fact, the crucial question to answer in evaluating the claim is *not*, "which possible reading of *NT* offers the most plausible argument given what we know today?" Rather, the crucial interpretive question is, "which possible reading offers the most plausible argument *given the information that Paley had to work with when he wrote the book?*" In other words, in responding appropriately to the interpretive claim, Oppy must attempt to discredit the inductive form of the argument *from Paley's point of view*.

Oppy faults Paley's argument for not taking evolutionary theory into account as an alternate explanation of the existence of function and suitability of constitution to function in the natural world. However, this accusation commits a serious anachronism because evolutionary theory was not available to Paley as an alternate hypothesis. The first serious developments in evolutionary theory did not arise before Lamarck published his views in 1801. More importantly, Darwin's *Origin of Species* was not published until 1859. The first printing of *NT* was already completed in 1802. Thus, clearly Oppy should not and cannot appeal to evolutionary theory as a hypothesis that Paley could have considered if he had intended his argument to be an inference to the best explanation. Evolutionary theory may weigh heavily against any modern thinker in support of (3), but this point has no bearing whatever on the question of whether Paley would have believed (3). Given what Paley knew when he was writing, an inference to the best explanation would have been the strongest argument he could have used—

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<sup>27</sup> Ibid.

remembering that the options are limited to those that can reasonably be construed from *NT*. Consequently, Oppy fails to offer convincing reason for his claim that an inference to the best explanation would not be a more charitable interpretation.

I have attempted to show that Oppy's interpretation of Paley's argument is based upon a dubious reading of *NT* in which one takes Paley to mean inevitable<sub>2</sub> when he writes "inevitable." Further, I have presented textual evidence for the conclusion that Paley repeatedly presents many ideas that fit perfectly if he is using an inference to the best explanation but that do not seem to fit at all if he is arguing deductively. Finally, I have shown that the most charitable interpretation of *NT* consists of reading Paley's argument as an inference to the best explanation. Therefore, I conclude that Oppy fails to show that Paley's argument is deductive. Rather, Paley is using an inductive inference to the best explanation.

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<sup>28</sup> I owe special thanks to Doug Groothuis and Timothy McGrew for helpful correspondence.