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THE PROBLEM OF EVIL, THE PROBLEM OF AIR, AND THE PROBLEM OF SILENCE

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It used to be widely held that evil—which for present purposes we may identify with undeserved pain and suffering—was incompatible with the existence of God: that no possible world contained both God and evil. So far as I am able to tell, this thesis is no longer defended. But arguments for the following weaker thesis continue to be very popular: Evil (or at least evil of the amounts and kinds we actually observe) constitutes evidence against the existence of God, evidence that seems decisively to outweigh the totality of available evidence *for* the existence of God.

In this paper, I wish to discuss what seems to me to be the most powerful version of the "evidential argument from evil." The argument takes the following form. There is a serious hypothesis h that is inconsistent with theism and on which the amounts and kinds of suffering that the world contains are far more easily explained than they are on the hypothesis of theism. This fact constitutes a *prima facie* case for preferring h to theism. Examination shows that there is no known way of answering this case, and there is good reason to think that no way of answering it will be forthcoming. Therefore, the hypothesis h is (relative to the epistemic situation of someone who has followed the argument this far) preferable to theism. But if p and q are inconsistent and p is (relative to one's epistemic situation) epistemically preferable to q, then it is not rational for one to accept q. (Of course, it does not follow either that it is rational for one to accept p or that it is rational for one to reject q.) It is, therefore, not rational for one who has followed the argument up

to this point to accept theism.[1]

In Section I, I shall present the version of the evidential argument from evil I wish to discuss. In Section II, I shall explain why I find the argument unconvincing. These two sections could stand on their own, and this paper might have consisted simply of the proposed refutation of the evidential argument from evil that they contain. But many philosophers will find the proposed refutation implausible, owing to the fact that it turns on controversial theses about the epistemology of metaphysical possibility and intrinsic value. And perhaps there will also be philosophers who find my reasoning unconvincing because of a deep conviction that, since evil just *obviously* creates an insoluble evidential problem for the theist, a reply to any version of the evidential argument can be nothing more than a desperate attempt to render the obvious obscure. Now if philosophers are unconvinced by one's diagnosis of the faults of a certain argument, one can attempt to make the diagnosis seem more plausible to them by the following method. One can try to find a "parallel" argument that is obviously faulty, and try to show that a parallel diagnosis of the faults of the parallel argument can be given, a diagnosis that seems plausible, and hope that some of the plausibility of the parallel diagnosis will rub off on the original. For example, if philosophers find one's diagnosis of the faults of the ontological argument unconvincing, one can construct an obviously faulty argument that "runs parallel to" the ontological argument—in the classical case, an argument for the existence of a perfect island. And one can then attempt to show that a diagnosis parallel to one's diagnosis of the faults of the ontological argument is a correct diagnosis of the faults (which, one hopes, will be so evident as to be uncontroversial) of the parallel argument. It is worth noting that even if an application of this procedure did not convince one's audience of the correctness of one's diagnosis of the faults of the original argument, the parallel argument might by itself be enough to convince them that there must be *something* wrong with the original argument.

This is the plan I shall follow. In fact, I shall consider *two* arguments that run parallel to the evidential argument from evil. In Section III, I shall present an evidential argument, which I feign is addressed to an ancient Greek atomist by one of his contemporaries, for the conclusion that the observed properties of air render a belief in atoms irrational. In Section IV, I shall present an evidential argument for the conclusion that the observed fact of "cosmic silence" renders a

belief in "extra-terrestrial intelligence" irrational. Neither of these parallel arguments—at least this seems clear to me—succeeds in establishing its conclusion. In each case, I shall offer a diagnosis of the faults of the parallel argument that parallels my diagnosis of the faults of the evidential argument from evil.

Finally, in Section V, I shall make some remarks in aid of a proposed distinction between facts that raise *difficulties* for a theory, and facts that constitute *evidence* against a theory.

I

Let 'S' stand for a proposition that describes in some detail the amount, kinds, and distribution of suffering—the suffering not only of human beings, but of all the sentient terrestrial creatures that there are or ever have been.[2] (We assume that the content of S is about what one would expect, given our own experience, the newspapers, history books, textbooks of natural history and paleontology, and so on. For example, we assume that the world was not created five minutes ago—or six thousand years ago—"complete with memories of an unreal past," and we assume that Descartes was wrong and that cats really do feel pain.)

Let "theism" be the proposition that the universe was created by an omniscient, omnipotent, and morally perfect being.[3]

The core of the evidential argument from evil is the contention that there is a serious hypothesis, inconsistent with theism, on which S is more probable than S is on theism. (The probabilities that figure in this discussion are epistemic. Without making a serious attempt to clarify this notion, we may say this much: p has a higher epistemic probability on h than q does, just in the case that, given h, q is more *surprising* than p. And here 'surprising' must be understood as having an epistemic, rather than a merely psychological, sense. It is evident that the epistemic probability of a proposition is relative to the "epistemic background" or "epistemic situation" of an individual or a community: the epistemic probability of p on h need not be the same for two persons or for the same person at two times.[4]) That hypothesis is "the hypothesis of indifference" (HI):

> Neither the nature nor the condition of sentient beings on earth is the result of benevolent or malevolent actions performed by non-human persons.[5]

Here is a brief statement of the argument that is built round this core. We begin with an epistemic challenge to the theist, the presentation of a *prima facie* case against theism: The truth of S is not at all surprising, given HI, but the truth of S is very surprising, given theism. (For the following propositions, if they are not beyond all dispute, are at least highly plausible. Suffering is an intrinsic evil; A morally perfect being will see to it that, insofar as it is possible, intrinsic evils, if they are allowed to exist at all, are distributed according to desert; An omniscient and omnipotent being will be able so to arrange matters that the world contains sentient beings among whom suffering, if it exists at all, is apportioned according to desert; the pattern of suffering recorded in S is well explained—insofar as it can be explained: many instances of suffering are obviously due to chance—by the biological utility of pain, which is just what one would expect on HI, and has little if anything to do with desert.) We have, therefore, a good *prima facie* reason to prefer HI to theism.

How shall the theist respond to this challenge? The "evidentialist" (as I shall call the proponent of the evidential argument from evil) maintains that any response must be of one of the following three types:

—the theist may argue that S is much more surprising, given HI, than one might suppose
—the theist may argue that S is much less surprising, given theism, than one might suppose
—the theist may argue that there are reasons for preferring theism to HI that outweigh the *prima facie* reason for preferring HI to theism that we have provided.

The first of these options (the evidentialist continues) is unlikely to appeal to anyone. The third is also unappealing, at least if "reasons" is taken to mean "arguments for the existence of God" in the traditional or philosophy-of-religion-text sense. Whatever the individual merits or defects of those arguments, none of them but the "moral argument" (and perhaps the ontological argument) purports to prove the existence of a morally perfect being. And neither the moral argument nor the ontological argument has many defenders these days. None of the "theistic" arguments that are currently regarded as at all promising is, therefore, really an argument for *theism*.[6] And, therefore, none of them can supply a reason for preferring theism to HI.

The second option is that taken by philosophers who construct *theodicies*. A theodicy, let us say, is the conjunction of theism with some "auxiliary hypothesis" *h* that purports to explain how S could be true, given theism. Let us think for a moment in terms of the probability calculus. It is clear that if a theodicy is to be at all interesting, the probability of S on the conjunction of theism and *h* (that is, on the theodicy) will have to be high—or at least not too low. But whether a theodicy is interesting depends not only on the probability of S on the conjunction of theism and *h*, but also on the probability of *h* on theism. Note that the higher P(*h*/theism), the more closely P(S/theism) will approximate P(S/theism & *h*). On the other hand, if P(*h*/theism) is low, P(S/theism) could be low even if P(S/theism & *h*) were high. (Consider, for example, the case in which *h* is S itself: even if P(S/theism) is low, P(S/theism & S) will be 1—as high as a probability gets.) The task of the theodicist, therefore, may be represented as follows: find an hypothesis *h* such that P(S/theism & *h*) is high, or at least not too low, and P(*h*/theism) is high. In other words, the theodicist is to reason as follows. "Although S might initially seem surprising on the assumption of theism, this initial appearance, like many initial appearances, is misleading. For consider the hypothesis *h*. The truth of this hypothesis is just what one would expect given theism, and S is just what one would expect [would not be all that surprising] given both theism and *h*. Therefore, S is just what one would expect [would not be all that surprising] given theism. And, therefore, we do not have a *prima facie* reason to prefer HI to theism, and the evidential argument from evil fails."[7]

But (the evidentialist concludes) the prospects of finding a theodicy that satisfies these conditions are not very promising. For any auxiliary hypothesis *h* that has actually been offered by the defenders of theism, it would seem that either no real case has been made for P(*h*/theism) being high, or else no real case has been made for P(S/theism & *h*) being high—or even not too low. Consider, for example, the celebrated Free Will Defense (FWD). Even if it is granted that P(FWD/theism) is high, there is every reason to think that P(S/theism & FWD) is low, since of all cases of suffering (a phenomenon that has existed for hundreds of millions of years), only a minuscule proportion involve, even in the most indirect way, beings with free will. And no one has the faintest idea of how to find a proposition that is probable on theism *and*, in conjunction with theism, renders S probable. Therefore, given the present state of the available

evidence, our original judgment stands: we have a good *prima facie* reason to prefer HI to theism. And, as we have seen, we have no reason to prefer theism to HI that outweighs this *prima facie* reason. It is, therefore, irrational to accept theism in the present state of our knowledge.

II

It will be noted that the evidential argument consists not only of an argument for the conclusion that there is a *prima facie* case for preferring HI to theism, but also of a list of options open to the theist who wishes to reply to that argument: the defender of theism must either refute the argument or else make a case for preferring theism to HI that outweighs the *prima facie* case for preferring HI to theism; if the defender chooses to refute the argument, he must do this by producing a theodicy in the sense explained in Section I.

This list of options seems to me to be incomplete. Suppose that one were successfully to argue that S was not surprising on theism—and not because S was "just what one should expect" if theism were true, but because no one is in a position to know whether S is what one should expect if theism were true. (Suppose I have never seen, or heard a description of, Egyptian hieroglyphs, although I am familiar with Chinese characters and Babylonian cuneiform and many other exotic scripts. I am shown a sheet of paper reproducing an ancient Egyptian inscription, having been told that it displays a script used in ancient Egypt. What I see cannot be described as "looking just the way one should expect a script used in ancient Egypt to look," but the fact that the script looks the way it does is not epistemically surprising on the hypothesis that it was a script used in ancient Egypt. I am simply not in a position to know whether *this* is the way one should expect a script that was used in ancient Egypt to look.[8]) If one could successfully argue that one simply could not know whether to expect patterns of suffering like those contained in the actual world in a world created by an omniscient, omnipotent, and morally perfect being, this would refute the evidentialist's case for the thesis that there is a *prima facie* reason for preferring HI to theism. If one is not in a position to assign any epistemic probability to S on theism—if one is not in a position even to assign a probability-range like 'high' or 'low' or 'middling' to S on theism—, then, obviously, one is not in

a position to say that the epistemic probability of S on HI is higher than the probability of S on theism.[9]

The evidentialist's statement of the way in which the defender of theism must conduct his defense is therefore overly restrictive: it is false that the defender must either make a case for theism or devise a theodicy. At any rate, another option exists as a formal possibility. But how might the defender of theism avail himself of this other option? Are there reasons for thinking that the assumption of theism yields no *prima facie* grounds for expecting a pattern of suffering different from that recorded by S?

I would suggest that it is the function of what have come to be called "defenses" to provide just such reasons. The word 'defense' was first employed as a technical term in discussions of the "logical" version of the argument from evil. In that context, a defense is a story according to which both God and suffering exist, and which is possible "in the broadly logical sense"—or which is such that there is no reason to believe that it is impossible in the broadly logical sense. Let us adapt the notion of a defense to the requirements of a discussion of the evidential argument: a defense is a story according to which God and suffering of the sort contained in the actual world both exist, and which is such that (given the existence of God) there is no reason to think that it is false, a story that is not surprising on the hypothesis that God exists. A defense obviously need not be a theodicy in the evidentialist's sense, for the probability of a defense need not be high on theism.[10] (That is, a defense need not be such that its denial is surprising on theism.) In practice, of course, the probability of a defense will never be high on theism: if the defender of theism knew of a story that accounted for the sufferings of the actual world and which was highly probable on theism, he would employ it as a theodicy. We may therefore say that, in practice, a defense is a story that accounts for the sufferings of the actual world and which (given the existence of God) is true "for all anyone knows."

What does the defender of theism accomplish by constructing a defense? Well, it's like this. Suppose that Jane wishes to defend the character of Richard III, and that she must contend with evidence that has convinced many people that Richard murdered the two princes in the Tower. Suppose that she proceeds by telling a story—which she does not claim to be true, or even more probable than not—that accounts for the evidence that has come down to us, a story according to which Richard did not murder the princes. If my reaction

to her story is, "For all I know, that's true. I shouldn't be at all surprised if that's how things happened," I shall be less willing to accept a negative evaluation of Richard's character than I might otherwise have been. (Note that Jane need not try to show that her story is highly probable on the hypothesis that Richard was of good character.) It would, moreover, strengthen Jane's case if she could produce not one story but many stories that "exonerated" Richard—stories that were not trivial variants on one another but which were importantly different.

This analogy suggests that one course that is open to the defender of theism is to construct stories that are true for all anyone knows—given that there is a God—and which entail both S and the existence of God. If the defender can do that, this accomplishment will undermine the evidentialist's case for the proposition that the probability of S is lower on theism than on HI. Of course, these stories will (presumably) be *false* for all anyone knows, so they will not, or should not, create any tendency to believe that the probability of S on theism is *not* lower than it is on HI, that it is about the same or higher. Rather, the stories will, or should, lead a person in our epistemic situation to refuse to make any judgment about the relation between the probabilities of S on theism and on HI.

I shall presently offer such a story. But I propose to simplify my task in a way that I hope is legitimate. It seems to me that the theist should not assume that there is a single reason, or tightly interrelated set of reasons, for the sufferings of all sentient creatures. In particular, the theist should not assume that God's reasons for decreeing, or allowing, the sufferings of non-rational creatures have much in common with His reasons for decreeing or allowing the sufferings of human beings. The most satisfactory "defenses" that have so far been offered by theists purport to account only for the sufferings of human beings. In the sequel, I will offer a defense that is directed towards the sufferings of non-rational creatures—"beasts," I shall call them. If this defense were a success, it could be combined with defenses directed towards the sufferings of human beings (like the Free Will Defense) to produce a "total" defense. This "separation of cases" does not seem to me to be an arbitrary procedure. Human beings are radically different from all other animals, and a "total" defense that explained the sufferings of beasts in one way and the sufferings of human beings in a radically different way would not be implausible on that account. Although it is not strictly to our

purpose, I will point out that this is consonant with the most usual Christian view of suffering. Typically, Christians have held that human suffering is not a part of God's plan for the world, but exists only because that plan has gone awry. On the other hand:

> Thou makest darkness that it may be night; wherein all the beasts of the forest do move.
> The lions, roaring after their prey, do seek their meat from God.
> The sun ariseth, and they get them away together, and lay them down in their dens. (Ps. 104: 20-22)

This and many other Biblical texts seem to imply that the whole sub-rational natural world proceeds according to God's plan (except insofar as we human beings have corrupted nature). And this, as the Psalmist tells us in his great hymn of praise to the order that God has established in nature, includes the phenomenon of predation.

I will now tell a story, a story that is true for all I know, that accounts for the sufferings of beasts. The story consists of the following three propositions:

(1) Every possible world that contains higher-level sentient creatures either contains patterns of suffering morally equivalent to those recorded by S, or else is massively irregular.
(2) Some important intrinsic or extrinsic good depends on the existence of higher-level sentient creatures; this good is of sufficient magnitude that it outweighs the patterns of suffering recorded by S.
(3) Being massively irregular is a defect in a world, a defect at least as great as the defect of containing patterns of suffering morally equivalent to those recorded by S.

The four key terms contained in this story may be explained as follows.

Higher-level sentient creatures are animals that are *conscious* in the way in which (*pace* Descartes) the higher non-human mammals are conscious.

Two patterns of suffering are *morally equivalent* if there are no morally decisive reasons for preferring one to the other: if there are no morally decisive reasons for creating a world that embodies one pattern rather than the other. To say that A and B are in this sense morally equivalent is not to say that they are in any interesting sense comparable. Suppose, for example, that the Benthamite dream of

a universal hedonic calculus is an illusion, and that there is no answer to the question whether the suffering caused by war is less than, the same as, or greater than the suffering caused by cancer. It does not follow that these two patterns of suffering are not morally equivalent. On the contrary: unless there is some "non-hedonic" morally relevant distinction to be made between a world that contains war and no cancer and a world that contains cancer and no war (i.e., a distinction that does not depend on comparing the amounts of suffering caused by war and cancer), it would seem to follow that the suffering caused by war and the suffering caused by cancer *are*, in the present technical sense, morally equivalent.

It is important to note that A and B may be morally equivalent even if they are comparable and one of them involves *less* suffering than the other. By way of analogy, consider the fact that there is no morally decisive reason to prefer a jail term of ten years as a penalty for armed assault to a term of ten years and a day, despite the indubitable facts that these two penalties would have the same deterrent effect and that one is lighter than the other. I have argued elsewhere that, for any amount of suffering that somehow serves God's purposes, it may be that some smaller amount of suffering would have served them as well.[11] It may be, therefore, that God has had to choose *some* amount of suffering as the amount contained in the actual world, and could, consistently with His purposes, have chosen any of a vast array of smaller or greater amounts, and that all of the members of this vast array of alternative amounts of suffering are morally equivalent. (Similarly, a legislature has to choose *some* penalty as the penalty for armed assault, and—think of penalties as jail terms measured in minutes—must choose among the members of a vast array of morally equivalent penalties.) Or it may be that God has decreed, with respect to this vast array of alternative, morally equivalent amounts of suffering, that *some* member of this array shall be the actual amount of suffering, but has left it up to chance which member that is.[12]

A *massively irregular world* is a world in which the laws of nature fail in some massive way. A world containing all of the miracles recorded in the New Testament would not, on that account, be massively irregular, for those miracles were too small (if size is measured in terms of the amounts of matter directly affected) and too few and far between. But a world would be massively irregular if it contained the following state of affairs:

> God, by means of a continuous series of ubiquitous miracles, causes a planet inhabited by the same animal life as the actual earth to be a hedonic utopia. On this planet, fawns are (like Shadrach, Meshach, and Abednego) saved by angels when they are in danger of being burnt alive. Harmful parasites and microorganisms suffer immediate supernatural dissolution if they enter a higher animal's body. Lambs are miraculously hidden from lions, and the lions are compensated for the resulting restriction on their diets by physically impossible falls of high-protein manna. On this planet, either God created every species by a separate miracle, or else, although all living things evolved from a common ancestor, a hedonic utopia has existed at every stage of the evolutionary process. (The latter alternative implies that God has, by means of a vast and intricately coordinated sequence of supernatural adjustments to the machinery of nature, guided the evolutionary process in such a way as to compensate for the fact that a hedonic utopia exerts no selection pressure.)

It would also be possible for a world to be massively irregular in a more systematic or "wholesale" way. A world that came into existence five minutes ago, complete with memories of an unreal past, would be on that account alone massively irregular—if indeed such a world was metaphysically possible. A world in which beasts (beasts having the physical structure and exhibiting the pain-behavior of actual beasts) felt no pain would be on that account alone massively irregular—if indeed such a world was metaphysically possible.

A *defect in a world* is a feature of a world that (whatever its extrinsic value might be in various worlds) a world is intrinsically better for not having.

Our story comprises propositions (1), (2), and (3). I believe that we have no reason to assign any probability or range of probabilities to this story. (With the following possible exception: if we have a reason to regard the existence of God as improbable, then we shall have a reason to regard the story as improbable.)

We should have reason to reject this story if we had reason to believe that there were possible worlds—worlds that were not massively irregular—in which higher-level sentient creatures inhabited a hedonic utopia. Is there any reason to think that there are

such worlds? I suppose that the only kind of reason one could have for believing that there was a possible world having a certain feature would be the reason provided by a plausible attempt to "design" a world having that feature. How does one go about designing a world?

One should start by describing in some detail the laws of nature that govern that world. (Physicists' actual formulations of quantum field theories and the general theory of relativity provide the standard of required "detail.") One should then go on to describe the boundary conditions under which those laws operate: the topology of the world's spacetime, its relativistic mass, the number of particle families, and so on. Then one should tell in convincing detail the story of cosmic evolution in that world: the story of the development of large objects like galaxies and stars and of small objects like carbon atoms. Finally, one should tell the story of the evolution of life. These stories, of course, must be coherent, given one's specification of laws and boundary conditions. Unless one proceeds in this manner, one's statements about what is intrinsically or metaphysically possible—and thus one's statements about an omnipotent being's "options" in creating a world—will be entirely subjective, and therefore without value. But I have argued for this view of the epistemology of modal statements (that is, of modal statements concerning major departures from actuality) elsewhere, and the reader is referred to those arguments. In fact, the argument of those papers should be considered a part of the argument of the present paper.[13]

Our own universe provides the only model we have for the formidable task of designing a world. (For all we know, in every possible world that exhibits any degree of complexity, the laws of nature are the actual laws, or at least have the same structure as the actual laws. There are, in fact, philosophically minded physicists who believe that there is only one possible set of laws of nature, and it is epistemically possible that they are right.) Our universe apparently evolved out of an initial singularity in accordance with certain laws of nature.[14] This evolution is not without its mysteries: the very early stages of the unfolding of the universe (the incredibly brief instant during which the laws of nature operated under conditions of perfect symmetry), the formation of the galaxies, and the origin of life on the earth are, in the present state of natural knowledge, deep mysteries. Nevertheless, it seems reasonable to assume that all of these processes involved only the non-miraculous operation of the laws of nature. One important thing that is known about the evolution

of the universe into its present state is that it has been a very tightly structured process. A large number of physical parameters have apparently arbitrary values such that if those values had been only slightly different (very, *very* slightly different) the universe would contain no life, and *a fortiori* no intelligent life.[15] It may or may not be the "purpose" of the cosmos to constitute an arena in which the evolution of intelligent life takes place, but it is certainly true that this evolution did take place, and that if the universe had been different by an all but unimaginably minute degree it wouldn't have. My purpose in citing this fact—it is reasonable to believe that it is a fact—is not to produce an up-to-date version of the Design Argument. It is, rather, to suggest that (at least, for all we know) only in a universe very much like ours could intelligent life, or even sentient life, develop by the non-miraculous operation of the laws of nature. And the natural evolution of higher sentient life in a universe like ours essentially involves suffering, or there is every reason to believe it does. The mechanisms underlying biological evolution may be just what most biologists seem to suppose—the production of new genes by random mutation and the culling of gene pools by environmental selection pressure—or they may be more subtle. But no one, I believe, would take seriously the idea that conscious animals, animals conscious as a dog is conscious, could evolve naturally without hundreds of millions of years of ancestral suffering. Pain is an indispensable component of the evolutionary process after organisms have reached a certain stage of complexity. And, for all we know, the amount of pain that organisms have experienced in the actual world, or some amount morally equivalent to that amount, is necessary for the natural evolution of conscious animals. I conclude that the first part of our defense is true for all we know: Every possible world that contains higher-level sentient creatures either contains patterns of suffering morally equivalent to those recorded by S, or else is massively irregular.

Let us now consider the second part of our defense: Some important intrinsic or extrinsic good depends on the existence of higher-level sentient creatures; this good is of sufficient magnitude that it outweighs the patterns of suffering recorded by S. It is not very hard to believe (is it?) that a world that was as the earth was just before the appearance of human beings would contain a much larger amount of intrinsic good, and would, in fact, contain a better balance of good over evil, than a world in which there were no organisms higher

than worms. (Which is not to say that there could not be worlds lacking intelligent life that contained a still better balance of good over evil—say, worlds containing the same organisms, but significantly less suffering.) And then there is the question of extrinsic value. One consideration immediately suggests itself: intelligent life—creatures made in the image and likeness of God—could not evolve directly from worms or oysters; the immediate evolutionary predecessors of intelligent animals must possess higher-level sentience.

We now turn to the third part of our defense: Being massively irregular is a defect in a world, a defect at least as great as the defect of containing patterns of suffering morally equivalent to those recorded by S. We should recall that a defense is not a theodicy, and that we are not required to argue at this point that it is *plausible to suppose* that massive irregularity is a defect in a world, a defect so grave that creating a world containing animal suffering morally equivalent to the animal suffering of the actual world is a reasonable price to pay to avoid it. We are required to argue only that *for all we know* this judgment is correct.

The third part of our defense is objectionable only if we have some *prima facie* reason for believing that the actual sufferings of beasts are a graver defect in a world than massive irregularity would be. Have we any such reason? It seems to me that we do not. To begin with, it does seem that massive irregularity is a defect in a world. One minor point in favor of this thesis is the witness of deists and other thinkers who have deprecated the miraculous on the ground that *any* degree of irregularity in a world is a defect, a sort of unlovely jury-rigging of things that is altogether unworthy of the power and wisdom of God. Presumably such thinkers would regard *massive* irregularity as a very grave defect indeed. And perhaps there is something to this reaction. It does seem that there is something right about the idea that God would include no more irregularity than was necessary in His creation. A second point is that many, if not all, massively irregular worlds are not only massively irregular but massively *deceptive*. This is obviously true of a world that looks like the actual world but which began five minutes ago, or a world that looks like the actual world but in which beasts feel no pain. (And this is not surprising, for our beliefs about the world depend in large measure on our habit of drawing conclusions that are based on the assumption that the world is regular.) But it is plausible to suppose that deception, and, *a fortiori*, massive deception, is inconsistent with

the nature of a perfect being. These points, however, are no more than suggestive, and, even if they amounted to proof, they would prove only that massive irregularity was a defect; they would not prove that it was a defect in any way comparable with the actual suffering of beasts. In any case, proof is not the present question: the question is whether there is a *prima facie* case for the thesis that the actual sufferings of beasts constitute a graver defect in a world than does massive irregularity.

What would such a case be based on? I would suppose that someone who maintained that there was such a case would have to rely on his moral intuitions, or, more generally, on his intuitions of value. He would have to say something like this: "I have held the two states of affairs—the actual sufferings of beasts and massive irregularity—before my mind and carefully compared them. My considered judgment is that the former is worse than the latter." This judgment presupposes that these two states of affairs are, in the sense that was explained above, comparable: one of them is worse than the other, or else they are of the same value (or disvalue). It is not clear to me that there is any reason to suppose that this is so. If it is *not* so, then, as we have seen, it can plausibly be maintained that the two states of affairs are morally equivalent, and a Creator could not be faulted on moral grounds for choosing either over the other. But let us suppose that the two states of affairs are comparable. In that case, if the value-judgment we are considering is to be trusted, then human beings possess a faculty that enables them correctly to judge the relative values of states of affairs of literally cosmic magnitude, states of affairs, moreover, that are in no way (as some states of affairs of cosmic magnitude may be) connected with the practical concerns of human beings. Why should one suppose that one's inclinations to make judgments of value are reliable in this area? One's intuitions about value are either a gift from God or a product of evolution or socially inculcated or stem from some combination of these sources. Why should we suppose that any of these sources would provide us with the means to make correct value-judgments in matters that have nothing to do with the practical concerns of everyday life? (I do think we must be able to speak of *correct* value-judgments if the Problem of Evil is to be of any interest. An eminent philosopher of biology has said in one place that God, if He existed, would be indescribably wicked for having created a world like this one, and, in another place, that morality is an illusion, an illusion that we are subject to because

of the evolutionary advantage it confers. These two theses do not seem to me to add up to a coherent position.) Earlier I advocated a form of modal skepticism: our modal intuitions, while they are no doubt to be trusted when they tell us that the table could have been placed on the other side of the room, are not to be trusted on such matters as whether there could be transparent iron or whether there could be a "regular" universe in which there were higher sentient creatures that did not suffer. And if this true, it is not surprising. Assuming that there are "modal facts of the matter," why should we assume that God or evolution or social training has given us access to modal facts knowledge of which is of no interest to anyone but the metaphysician? God or evolution has provided us with a capacity for making judgments about size and distance that is very useful in hunting mammoths and driving cars, but which is of no use at all in astronomy. It seems that an analogous restriction applies to our capacity for making modal judgments. How can we be sure that an analogous restriction does not also apply to our capacity for making *value*-judgments? My position is that we cannot be sure, and that for all we know our inclinations to make value-judgments are not veridical when they are applied to cosmic matters unrelated to the concerns of everyday life. (Not that our inclinations in this area are at all uniform. I myself experience no inclination to come down on one side or the other of the question whether massive irregularity or vast amounts of animal suffering is the graver defect in a world. I suspect that others do experience such inclinations. If they don't, of course, then I'm preaching to the converted.) But then there is no *prima facie* case for the thesis that the actual sufferings of beasts constitute a graver defect in a world than does massive irregularity. Or, at least, there is no case that is grounded in our intuitions about value. And in what else could such a case be grounded?

These considerations have to do with intrinsic value, with comparison of the intrinsic disvalue of two states of affairs. There is also the matter of extrinsic value. Who can say what the effects of creating a massively irregular world might be? What things of intrinsic value might be frustrated or rendered impossible in a massively irregular world? We cannot say. Christians have generally held that at a certain point God plans to hand over the government of the world to humanity. Would a massively irregular world be the sort of world that could be "handed over"? Perhaps a massively irregular world would immediately dissolve into chaos if an infinite being were not

constantly making adjustments to it. We simply cannot say. If anyone insists that he has good reason to believe that nothing of any great value depends on the world's being regular, we must ask him why he thinks he is in a position to know things of that sort. We might remind him of the counsel of epistemic humility that was spoken to Job out of the whirlwind:

> Gird up now thy loins like a man; for I will demand of thee, and answer thou me.
> Where wast thou when I laid the foundations of the earth? Declare if thou hast understanding.
> Knowest thou it, because thou wast then born, or because the number of thy days is great?
> Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion?
> Knowest thou the ordinances of heaven? Canst thou set the dominion thereof in the earth?[16]

I have urged extreme modal and moral skepticism (or, one might say, humility) in matters unrelated to the concerns of everyday life. If such skepticism is accepted, then we have no reason to accept the evidentialist's premise that "an omniscient and omnipotent being will be able so to arrange matters that the world contains sentient beings among whom suffering, if it exists at all, is apportioned according to desert." More exactly, we have no reason to suppose that an omniscient and omnipotent being could do this without creating a massively irregular world; and, for all we know, the intrinsic or extrinsic disvalue of a massively irregular world is greater than the intrinsic disvalue of vast amounts of animal suffering (which, presumably, are not apportioned according to desert). If these consequences of modal and moral skepticism are accepted, then there is no reason to believe that the probability of S on HI is higher than the probability of S on theism, and the evidential argument from evil cannot get started. Even if we assume that the probability of S on HI is high (that the denial of S is very surprising on HI), this assumption gives us no reason to prefer HI to theism. If there were such a reason, it could be presented as an argument:

> The probability of S on HI is high
> We do not know what to say about the probability of S on theism
> HI and theism are inconsistent
> Therefore, for anyone in our epistemic situation, the truth of S constitutes a *prima facie* case for preferring HI to theism.

This argument is far from compelling. If there is any doubt about this, it can be dispelled by considering a parallel argument. Let L be the proposition that intelligent life exists, and let G be the proposition that God wants intelligent life to exist. We argue as follows:

> The probability of L on G is high
> We do not know what to say about the probability of L on atheism
> G and atheism are inconsistent
> Therefore, for anyone in our epistemic situation, the truth of L constitutes a *prima facie* case for preferring G to atheism.

The premises of this argument are true. (As to the second premise, there has been considerable debate in the scientific community as to whether the natural evolution of intelligent life is inevitable or extremely unlikely or something in between; let us suppose that "we" are a group of people who have tried to follow this debate and have been hopelessly confused by it.) But I should be very surprised to learn of someone who believed that the premises of the argument entailed its conclusion.

I will close this section by pointing out something that is not strictly relevant to the argument it contains, but is, in my view, of more than merely autobiographical interest. I have not accepted the extreme modal skepticism that figures so prominently in the argument of this section as a result of epistemic pressures exerted by the evidential argument from evil. I was an extreme modal skeptic before I was a theist, and I have, on the basis of this skepticism, argued (and would still argue) against both Swinburne's attempt to show that the concept of God is coherent, and Plantinga's attempt to use the modal version of the ontological argument to show that theism is rational.[17]

III

Imagine an ancient Greek, an atomist who believes that the whole world is made of tiny, indestructible, immutable solids. Imagine that an opponent of atomism (call him Aristotle) presents our atomist with the following argument: "If fire were made of tiny solids, the same solids earth is made of, or ones that differ from them only in shape, then fire would not be Absolutely Light—it would not rise toward the heavens of its own nature. But that fire is not Absolutely Light

is contrary to observation."[18] From our lofty twentieth-century vantage-point, we might be inclined to regard Aristotle's argument as merely quaint. But this impression of quaintness rests on two features of the argument that can be removed without damage to what is, from one point of view anyway, its essential force. The two quaint features of Aristotle's argument, the idea that fire is a stuff, and the idea of the Absolutely Light, can be removed from the argument by substituting air for fire and by substituting the behavior we nowadays associate with the gaseous state for the defining behavior of the Absolutely Light (that is, a natural tendency to move upwards). The resulting argument would look something like this:

> Suppose air were made of tiny solid bodies as you say. Then air would behave like fine dust: it would eventually settle to the ground and become a mere dusty coating on the surface of the earth. But this is contrary to observation.

Well, what is wrong with this argument? Why *don't* the O_2, N_2, CO_2, and other molecules that make up the atmosphere simply settle to the ground like dust particles? The answer is that air molecules, unlike dust particles, push on one another; they are kept at average distances that are large in comparison with their own sizes by repulsive forces (electromagnetic in nature), the strength of these forces in a given region being a function of the local temperature. At the temperatures one finds near the surface of the earth (temperatures maintained by solar radiation and the internal heat of the earth), the aggregate action of these intermolecular forces produces the kind of aggregate molecular behavior that, at the macroscopic level of description, we call the gaseous state.

We can see where the improved version of Aristotle's argument goes wrong. (We can also see that in one minor respect it's better than an ancient Greek could know: if it weren't for intermolecular forces, air molecules would not simply settle slowly to the ground; they would drop like rocks.) But what about our imaginary ancient atomist, who not only doesn't know all these things about intermolecular forces and temperature and so on, but who couldn't even conceive of them as epistemic possibilities? What shall he say in response to the improved version of Aristotle's argument?

In order to sharpen this question, let us imagine that a Greek philosopher called A-prime has actually presented our atomist with the air-and-dust argument, and let us imagine that A-prime has at

his disposal the techniques of a late-twentieth-century analytical philosopher. Having presented the atomist with the simple argument that I have given above (the primitive or "whence, then, is air?" version of the Argument from Air), he presses his point by confronting the atomist with a much more sophisticated argument, the *evidential* argument from air. "Let HI, the Hypothesis of Independence, be the thesis that there are four independent and continuous elements, air among them, each of which has *sui generis* properties (you can find a list of them in any reputable physics text) that determine its characteristic behavior. Let S be a proposition that records the properties of air. The simple air-and-dust argument is sufficient to establish that S is not surprising given HI, but is very surprising given atomism. There are only three ways for you to respond to this *prima facie* case against atomism: you may argue that S is much more surprising, given HI than one might suppose; or that S is much less surprising, given atomism, than one might suppose; or that there are reasons for preferring atomism to HI that outweigh the *prima facie* reason for preferring HI to atomism that is provided by the air-and-dust argument. The first I shall not discuss. The third is unpromising, unless you can come up with something better than the very abstract metaphysical arguments with which you have attempted to support atomism in the past, for they certainly do not outweigh the clear and concrete air-and-dust argument. The only course open to you is to construct an *atomodicy*. That is, you must find some auxiliary hypothesis *h* that explains how S could be true, given atomism. And you will have to show both that the probability of S is high (or at least not too low) on the conjunction of atomism and *h* and that the probability of *h* on atomism is high. While you may be able to find an hypothesis that satisfies the former condition, I think it very unlikely that you will be able to find one that satisfies the latter. In any case, unless you *can* find an hypothesis that satisfies both conditions, you cannot rationally continue to be an atomist."

Whatever else may be said about this argument, A-prime is certainly right about one thing: it is unlikely that the atomist will be able to produce a successful atomodicy. Even if he were told the modern story about air, he could not do it. At least, I don't think he could. What is the epistemic probability on atomism (relative to the epistemic situation of an ancient Greek) of our complicated modern story of intermolecular forces and the gaseous state? What probability should someone who knew nothing about the micro

structure of the material world except that it was composed of atoms (it is, of course, our "elementary particles" and not our "atoms" or our "molecules" that correspond to the atoms of the Greeks) assign to the modern story? As far as I am able to judge, the only rational thing such a person could do would be to decline to assign any probability to the modern story on atomism. (The answer of modern science to the air-and-dust argument does not take the form of a story that, relative to the epistemic situation of an ancient Greek, is highly probable on atomism.)

Fortunately for the atomist, A-prime's demand that he produce an atomodicy is unreasonable. The atomist need do nothing more in response to the evidential argument from air than find a defense—or, better, several independent defenses. A defense, of course, is a story that explains how there could be a stuff that has the properties of air (those known to an ancient Greek), given that the material world is made entirely of atoms. A defense need *not* be highly probable on atomism. It is required only that, given atomism, the defense be true for all anyone (*sc.* any ancient Greek) knows.

Here is one example of a defense: air atoms (unlike earth atoms) are spheres covered with a "fur" of long, thin, flexible spikes that are, unless flexed by contact with another atom, perpendicular to the surface of the atom's "nucleus" (i.e., its central sphere); the length of the spikes is large in comparison with the diameters of nuclei, and their presence thus tends to keep nuclei far apart. Since, for all anyone (anyone in the epistemic situation of an ancient Greek) knows, some atoms have such features—if there are atoms at all—the observed properties of air are not surprising on the assumption of atomism. Since there are defenses that are true for all anyone (anyone in the epistemic situation of an ancient Greek) knows, no ancient Greek was in a position to say anything about the probability on atomism of S, the proposition that sums up the properties of air that were known to him. A-prime, therefore, is left with no better argument than the following:

> The probability of S on HI is high
> We do not know what to say about the probability of S on atomism
> HI and atomism are inconsistent
> Therefore, for anyone in our epistemic situation, the truth of S constitutes a *prima facie* case for preferring HI to atomism.

And this argument is manifestly invalid.

IV

We know how it is that air can be composed of molecules and yet not drift to the ground like dust. This knowledge provides us with a certain rather Olympian perspective from which to view the "Problem of Air." I wish next to examine the epistemic situation of those of our contemporaries who believe that the Milky Way galaxy (ours) contains other intelligent species than humanity. (Since they are our contemporaries, we cannot view their situation from any such Olympian perspective.) Let us confront them with an argument analogous to the argument from evil and the argument from air. The essence of this argument is contained in a question of Enrico Fermi's, a question as pithy as 'Whence, then, is evil?': Where are they?

If there are other intelligent species in the galaxy, the overwhelming probability is that at least one intelligent species existed at least a hundred million years ago. There has been life on the earth for at least thirty times that long, and there is nothing magical about the present time. The universe was just as suitable for intelligent life a hundred million years ago, and if the pace of evolution on the earth had been just three or four percent faster, there would have been intelligent life *here* a hundred million years ago. An intelligent and technologically able species will attempt to send messages to other species elsewhere in the galaxy (as we have begun to do). The most efficient way to do this is to send out self-reproducing robotic probes to other stars: when such a probe reaches another star, it makes two or more duplicates of itself out of local materials, and these duplicates proceed to further stars. Then it waits, perhaps for hundreds of millions of years, till it detects locally produced radio signals, at which point it reveals itself and delivers its message. (There are no fundamental technological barriers to this program. At our present rate of scientific progress, we shall be able to set such a process in motion within the next century.) It is not hard to show that the descendants of the original probes will reach every star in the galaxy within fifty million years. (We assume that the probes are capable of reaching one-tenth the speed of light.) But no such probe has revealed itself to us. Therefore, any non-human intelligence in the galaxy came into existence less than fifty million years ago. But it is statistically very unlikely that there are non-human intelligences

all of which came into existence within the last fifty million years. (The reasoning is like this: if you know that such people as there are in the Sahara Desert are distributed randomly, and if you know that there are no people in the Sahara except, possibly, within a circular area one hundred miles in diameter that is hidden from you, you can conclude that there are probably no people at all in the Sahara.) Furthermore, it is not merely the absence of robotic probes that should disturb the proponent of "extra-terrestrial intelligence." There are also the absence of radio signals from thousands of nearby stars and several of the nearer galaxies[19] and the absence of manifestations of "hypertechnology" like the wide-angle infrared source that would signal the presence of a star that has been surrounded with a "Dyson sphere." We may refer collectively to all of these "absences" as *cosmic silence*, or simply *silence*. (If there are other intelligent species in the galaxy, or even in nearby galaxies, they are *species absconditae*.) The obvious implication of these observations is that we are alone.[20]

Let us call the thesis that there is intelligent life elsewhere in the galaxy *noetism*. The above argument, the argument from cosmic silence, provides materials from which the anti-noetist may construct an evidential argument against noetism analogous to the evidential argument from evil: "Let the Hypothesis of Isolation (HI) be the hypothesis that humanity is the only intelligent species that exists or has ever existed in the Milky Way galaxy or any of the nearby galaxies. Let S be a proposition that records all of the observations that constitute a failure to discover any manifestation whatever of life, and, *a fortiori*, of intelligent life, elsewhere in the universe. The argument from cosmic silence is sufficient to establish that the truth of S (which, of course, is not at all surprising given HI) is very surprising, given noetism. There are only three ways for you to respond to the argument from cosmic silence: you may argue that S is much more surprising, given HI, than one might suppose; or that S is much less surprising, given noetism, than one might suppose; or that there are reasons for preferring noetism to HI that outweigh the *prima facie* reason for preferring HI to noetism that is provided by the argument from cosmic silence. The first is no more than a formal possibility. The third is unpromising, unless you can come up with something better than those facile arguments for the prevalence of life in the cosmos that are so popular with astronomers and physicists and so exasperating to evolutionary biologists.[21] The

only course open to you is to construct a *noödicy*. That is, you must find some auxiliary hypothesis *h* that explains how S could be true, given noetism. And you will have to show both that the probability of S is high (or at least not too low) on the conjunction of noetism and *h* and that the probability of *h* on noetism is high. While you may be able to find an hypothesis that satisfies the former condition, I think it very unlikely that you will be able to find one that satisfies the latter. In any case, unless you *can* find an hypothesis that satisfies both conditions, you cannot rationally continue to be an noetist."

The anti-noetist is no doubt right in supposing that it is very unlikely that the noetist will be able to construct a successful noödicy. One example should suffice to make the point. Consider the elegantly simple, if rather depressing, Nuclear Destruction Scenario: intelligent species do not last long enough to make much of a mark on the cosmos; within at most a few decades of developing radio transmitters powerful enough to be detected across a distance of light-years (and long before they can make self-reproducing intersiderial robotic probes), they invariably destroy themselves in nuclear wars. It is clear that the Nuclear Destruction Scenario is a failure as a noödicy, for it is not highly probable on noetism. (That intelligent species invariably destroy themselves in nuclear wars is not highly probable on the hypothesis that intelligent species exist.) The proponents of extra-terrestrial intelligence have provided a wide range of possible explanations of "cosmic silence" (intelligence does not necessarily imply technology; the desire to communicate with other intelligent species is a human idiosyncrasy; the most efficient means of intersiderial signaling, the one that all the extra-terrestrials actually employ, is one we haven't yet thought of), but it is clear that none of these possible explanations should be regarded as *highly probable* on noetism. We simply do not know enough to make any such probability judgment. Shall the noetist therefore concede that we have shown his position to be irrational? No, for the anti-noetist's demand that the noetist produce a noödicy is wholly unreasonable. The noetist need only produce one or more *defenses*, one or more explanations of the phenomenon of cosmic silence that entail noetism and are true for all we know. And this is just what the noetist has done. (I have already mentioned several of them.) Since there are defenses that for all anyone knows are true, no one knows what to say about the probability on noetism of S (the proposition that records all of our failed attempts to discover any manifestation of intelligent

life elsewhere in the universe). The anti-noetist has therefore failed to show that the truth of S constitutes a *prima facie* case in favor of preferring HI to noetism.

V

"This is all very well. But evil *is* a difficulty for the theist, and the gaseous state *was* a difficulty for the ancient atomist, and cosmic silence *is* a difficulty for the noetist. You seem to be saying that they can just ignore these difficulties."

Not at all. I have said that these difficulties (I accept the term 'difficulty') do not render their beliefs irrational—not even if they are unable to find arguments that raise the probabilities of their hypotheses relative to the probabilities of competing hypotheses that do not face the same difficulties, and are also unable to devise auxiliary hypotheses that enable them to construct "-dicies." It doesn't follow that they should simply ignore the difficulties.

"Well, what *should* they do?"

To begin with, they can acknowledge the difficulties. They can admit that the difficulties exist and that they're not sure what to say about them. They might go on to offer some speculations about the causes of the phenomena that raise the difficulties: mechanisms that would account for the gaseous state, possible conditions that would interfere with communications across light-years, reasons God might have for allowing evil. Such speculations need not be (they almost certainly will not be) highly probable on the "-ism" in whose defense they are employed. And they need not be probable on anything that is known to be true, although they should not be improbable on anything that is known to be true. They are to be offered as explanations of the difficult phenomena that are, *for all anyone knows*, the correct ones. In sum, the way to deal with such difficulties is to construct defenses.

"But if a phenomenon is a 'difficulty' for a certain theory, does that not mean that it is evidence against that theory? Or if it is not evidence against that theory, in what sense can it raise a 'difficulty' for the theory? Are you not saying that it can be right to accept a theory to which there is counterevidence when there are competing theories to which there is no counterevidence?"

That sounds good, but it is really a recipe for rejecting just about

any interesting theory. Just about any interesting theory is faced with phenomena that make the advocates of the theory a bit uncomfortable, this discomfort being signalled by the tendency to speculate about circumstances consistent with the theory that might produce the phenomena. For any theory that faces such a difficulty, there will always be available another "theory," or at least another hypothesis, that does not face that difficulty: its denial. (The denial of an interesting theory will rarely if ever itself be an interesting theory; it will be too general and non-specific.) Your suggestion would therefore appear to constrain us never to accept any interesting theory, but always either to accept its denial or else neither the theory nor its denial. The latter will be the more common result, since the denial of a theory can usually be partitioned into interesting theories that face individual difficulties. (For example, the denial of atomism can be partitioned into the following hypotheses: matter is continuous; matter is neither continuous nor atomically structured; matter does not exist. Each of these hypotheses faces difficulties.) This result might be avoided if you placed some sort of restriction on what counted as a "competing theory," but it is not clear what sort of restriction would be required. It will not do simply to rule out the denial of a theory as a competing theory, for contraries of the theory that were very general and non-specific could produce equally counterintuitive results. If, moreover, you did produce a satisfactory solution to this problem, it is not clear what consequences your solution might have for the evidential argument from evil. Consider, for example, the Hypothesis of Indifference. This is not a very specific thesis: it tells us only that the nature and condition of sentient beings on earth do *not* have a certain (very narrowly delineated) cause. Perhaps it would not count as a proper "competitor" with the quite specific thesis we have called 'theism'. Perhaps it would be a consequence of your solution that only some proposition more specific than HI, some proposition that entailed but was not entailed by HI, could properly be in competition with theism. And this proposition might face difficulties of its own, difficulties not faced by HI.

But we may answer your question more directly and simply. A difficulty with a theory does not necessarily constitute evidence against it. To show that an acknowledged difficulty with a theory is not evidence against it, it suffices to construct a defense that accounts for the facts that raise the difficulty. (This thesis by no means

provides an automatic "out" for a theory that is confronted with some recalcitrant observation, for a defense is not automatically available to the proponents of every theory that is confronted with a recalcitrant observation. A defense may not be improbable, either on the theory in whose cause it is employed, or on anything we know to be true. In a particular case, it may be that no one can think of any hypothesis that satisfies these two conditions, and what was a mere difficulty for a theory will thereby attain to the status of evidence against the theory. It is perhaps worth pointing out that two or more difficulties may jointly constitute evidence against a theory, even if none of them taken individually counts as evidence against it. This could be the case if the defenses that individually "handle" the difficulties are inconsistent, or if—despite the fact that none of the defenses taken individually is improbable—their conjunction is improbable.)

The central thesis of this paper may be usefully summarized in the terminology that has been introduced in the present section: While the patterns of suffering we find in the actual world constitute a *difficulty* for theism and do not constitute a difficulty for the competing hypothesis HI, they do not—owing to the availability of the defense[22] I have outlined—attain to the status of *evidence* that favors HI over theism. It follows that the evidential argument from evil fails, for it is essential to the evidential argument that those patterns of suffering be evidence that favors HI over theism.[23]

Notes

1. My formulation of this argument owes a great deal to a recent article by Paul Draper ("Pain and Pleasure: An Evidential Problem for Theists," *Noûs* 23 (1989), 331-50). I do not, however, claim that the argument I shall present *is* Draper's intricate and subtle argument, or even a simplified version of it. (One important difference between the argument discussed in the present paper and Draper's argument is that the latter makes reference to the distribution of both pain and pleasure, while the former makes reference only to the distribution of pain.) Nevertheless, I hope that the version of the evidential argument from evil that I shall discuss is similar enough to Draper's that what I say about my version will at least suggest strategies that the theist can employ in dealing with Draper's argument. Draper (p. 332) credits Hume with being the first to ask the question whether there is "any serious hypothesis that is logically inconsistent with theism [and] explains some significant set of facts about evil...much better than theism does." (See *Dialogues Con-*

cerning Natural Religion, Part XI.)

2. In Draper's argument, the role that corresponds to the role played by S in our argument is played by a proposition O that reports "both the observations one has made of humans and animals experiencing pain or pleasure and the testimony one has encountered concerning the observations others have made of sentient beings experiencing pain or pleasure" (p. 332). I find that the argument goes more easily if it is stated in terms of the probability (on various hypotheses) of the pattern of suffering that it is reasonable to believe the actual world exhibits, rather than in terms of the probability (on those hypotheses) of the observations and testimony on which our reasonable belief in that pattern rests. I do not think that this modification of Draper's strategy leaves me with an argument that is easier to refute than the argument that would have resulted if I had retained this feature of his strategy.
3. *Cf.* Draper, p. 331. Perhaps we should add that this being has not ceased to exist, and has never ceased to be omniscient, omnipotent, or morally perfect.
4. *Cf.* Draper, pp. 333 and 349 (note 2). Some difficulties with the notion of epistemic probability are discussed in note 7 below.
5. *Cf.* Draper, p. 332.
6. It is a currently popular view that one can have reasons for believing in God that are of a quite different kind from "arguments for the existence of God." For a sampling of versions of this view, see the essays by the editors and the essay by William P. Alston in Alvin Plantinga and Nicholas Wolterstorff, eds., *Faith and Rationality: Reason and Belief in God* (South Bend, Indiana: the University of Notre Dame Press, 1983). My own position on this matter is that some version of this view is right, and that there are reasons for believing in God that are of the general kind described by Plantinga, Wolterstorff, and Alston. I believe, moreover, that these reasons not only can provide one with adequate justification for being a theist in the absence of a *prima facie* case against theism, but are strong enough to override any conceivable *prima facie* case against theism. (For a contrary view—which I believe rests on a misunderstanding—see Draper, pp. 347-8.) But I shall not defend this thesis here, since the point of the present paper is that the patterns of suffering that exist in the actual world do not constitute even a *prima facie* case against theism.
7. I prefer to formulate the evidential argument from evil in terms of epistemic surprise, rather than in terms of high and low epistemic probability. (Draper's essay suggested this use of the concept of "surprise" to me. Although his "official" formulation of his argument is in terms of epistemic probability, he frequently employs the notion of "surprise" in his informal commentary on the argument. Indeed, at one place—see p. 333—he comes very close to explaining epistemic probability as I did in the text: by equating 'has a lower epistemic probability' with 'is more surprising'.) Let me attempt to explain why I am uneasy about formulating the argument in terms of probabilities. If the argument is

so formulated, it would appear to depend on the validity of the following inference-form: *p*; the probability of *p* on *q* is much higher than the probability of *p* on *r*; *q* and *r* are inconsistent; therefore, there exists a *prima facie* reason (*viz*, that *p*) for preferring *q* to *r*. The trouble with this inference-form is that the probability of *p* may be very low on *q* despite the fact that *p* is not at all *surprising* on *q*. For example, the probability of the hypothesis that the unobservable card that Alice is holding is the four of clubs is quite low on the hypothesis that she drew the card at random from a standard deck, but the former hypothesis is not at all surprising on the latter. Now let S be some true proposition that has a low probability on theism, but is not at all surprising on theism. I should think that the proposition that states the exact number of dogs would do: in "most" possible worlds in which God exists, the number of dogs is not the actual number. It is clear that the following facts do not comprise a *prima facie* case for preferring 'S and God does not exist' to 'God exists': S; the probability of S on 'S and God does not exist' is much higher than the probability of S on 'God exists'; 'S and God does not exist' and 'God exists' are inconsistent.

These considerations show that the use of the language of high and low probabilities in formulating the evidential argument from evil is a source of possible confusion. Since, however, my criticisms of the argument have nothing to do with this point, I shall continue to employ this language. But I shall employ it only as a stylistic device: anything I say in this language could easily be restated in terms of epistemic surprise.

8. I can have *some* epistemically warranted expectations about how what I see displayed on the sheet of paper will look: it must in some sense "look like writing"—it can't be a detailed drawing of a cat or a series of a thousand identical marks. Similarly, I can have *some* epistemically warranted expectations about how suffering will be distributed if there is a God. I would suppose, for example, that it is highly improbable on theism that there be sentient creatures and that all of them be in excruciating pain at every moment of their existence.
9. Well, one might somehow know the probability of S on theism as a function of the probability of S on HI; one might know that the former probability was one-tenth the latter, and yet have no idea what either probability was. But that is not the present case. The evidentialist's argument essentially involves two independent probability-judgments: that the probability of S on HI is at least not too low, and that the probability of S on theism is very low.
10. Indeed, in *one* sense of probability, the probability of a defense may be very low on theism. We have said that a defense may not be *surprising* on theism, but, as we saw in note 7, there is a perfectly good sense of probability in which a proposition that is not at all surprising on theism may nevertheless be very improbable on theism. If the defender of theism had at his disposal a very large number of defenses, all of them inconsistent with the others, and none of them epistemically preferable to any of the others, it is hard to see why he should not conclude that

(relative to his epistemic situation) the probability of any given one of them was very low on theism.

11. "The Magnitude, Duration, and Distribution of Evil: A Theodicy," *Philosophical Topics*, Vol. 16, no. 2 (1988), pp. 161-87. See especially pp. 167-8. Failure to appreciate this consideration is a weak point in many versions of the evidential argument from evil. Consider, for example, William L. Rowe's much-discussed article, "The Problem of Evil and Some Varieties of Atheism" (*American Philosophical Quarterly* 16 (1979) pp. 335-41). In this article, Rowe employs the following premise:

> An omniscient, wholly good being would prevent the occurrence of any intense suffering it could, unless it could not do so without losing some greater good or permitting some evil equally bad or worse.

If there are alternative, morally equivalent amounts of (intense) suffering, then this premise is false. To make this point more concrete, let us consider Rowe's famous case of a fawn that dies in prolonged agony of burns that it suffers in a forest fire caused by lightning. God, I concede, could have miraculously prevented the fire, or miraculously saved the fawn, or miraculously caused its agony to be cut short by death. And, I will concede for the sake of argument, if He had done so, this would have thwarted no significant good and permitted no significant evil. But what of the hundreds of millions (at least) of similar incidents that have, no doubt, occurred during the long history of life? Well, I concede, He could have prevented any one of them, or any two of them, or any three of them...without thwarting any significant good or permitting any significant evil. But could he have prevented all of them? No—not without causing the world to be massively irregular. And, of course, there is no sharp cut-off point between a world that is massively irregular and a world that is not—just as there is no sharp cut-off point between a penalty that is an effective deterrent for armed assault and a penalty that is not. There is, therefore, no *minimum* number of cases of intense suffering that God could allow without forfeiting the good of a world that is not massively irregular—just as there is no shortest sentence that a legislature can establish as the penalty for armed assault without forfeiting the good of effective deterrence.

12. See my essay "The Place of Chance in a World Sustained by God" in Thomas V. Morris, ed., *Divine and Human Action: Essays in the Metaphysics of Theism* (Ithaca, N.Y.: Cornell University Press, 1988), pp. 211-35.
13. "Ontological Arguments," *Noûs* 11 (1977) pp. 375-95; Review of *The Coherence of Theism* by Richard Swinburne, *The Philosophical Review* LXXXVII (1979), pp. 668-72. See also George Seddon, "Logical Possibility," *Mind* LXXXI (1972), pp. 481-94.
14. These laws, being quantum-mechanical, are indeterministic. God could not, therefore, have "fine-tuned" the initial state of a universe like ours so as to render an eventual universal hedonic utopia causally inevitable. It would seem to be almost certain that, owing to quantum-mechanical

indeterminacy, a universe that was a duplicate of ours when ours was, say, 10^{-45} seconds old could have evolved into a very different universe from our present universe. (There is also the point to be considered that there probably *was* no initial state of the universe.) Would it be possible for an omniscient and omnipotent being to create a universe that evolved deterministically out of a carefully selected initial state into an hedonic utopia? This question raises many further questions, questions that mostly cannot be answered. Nevertheless, the following facts would seem to be relevant to an attempt to answer it: life depends on chemistry, and chemistry depends on atoms, and atoms depend on quantum mechanics (classically speaking, an atom cannot exist: the electrons of a "classical" atom would spiral inward, shedding their potential energy in the form of electromagnetic radiation, till they collided with the nucleus), and quantum mechanics is essentially indeterministic.

15. This fact has been widely remarked on. See, e.g., John Leslie, "Modern Cosmology and the Creation of Life" in Ernan McMullin, ed., *Evolution and Creation* (South Bend, Indiana: the University of Notre Dame Press, 1985), pp. 91-120.
16. This is not properly speaking a quotation; it is, rather, a selection of verses from Chapter 38 of the Book of Job. It comprises verses 3, 4, 21, 31, and 33.
17. See the article and review cited in note 13.
18. *Cf. De Cælo* IV, especially $309^{a}18$-$310^{a}13$.
19. This latter fact is very important in the debate about extra-terrestrial intelligence. If someone in our galaxy aimed a powerful signal at, say, the Andromeda galaxy, then, two million years later, anyone in the Andromeda galaxy who aimed a sensitive receiver precisely at our galaxy would detect that signal. When we aim a sensitive receiver precisely at the Andromeda galaxy, however, we detect no signal. Therefore, no one on any planet circling any of the hundred billion or more stars in the Andromeda galaxy was aiming a signal at the Milky Way galaxy two million years ago. (This argument actually depends on the false assumption that all of the stars in the Andromeda galaxy are equally distant from us, but the essential point of the argument is sound.)
20. For an excellent popular article on the search for extra-terrestrial intelligence, see Gregg Easterbrook, "Are We Alone?", *The Atlantic*, August 1988, pp.25-38.
21. See for example, Ernst Mayr, "The Probability of Extraterrestrial Intelligent Life," in Michael Ruse, ed., *Philosophy of Biology* (New York: Macmillan, 1989), pp. 279-85.
22. Are there other defenses—other defenses that cover the same ground as the defense I have presented in Section II? I should like to think so, although I have not had any very interesting ideas about how additional defenses might be constructed. I should welcome suggestions.
23. This paper was read at Brandeis University. The author wishes to thank the members of the Brandeis Philosophy Department, and especially Eli Hirsch, for their helpful comments and criticisms.