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## ANSWERS TO PRAYER AND CONDITIONAL SITUATIONS

#### Peter Forrest

In this paper I defend the Direct Actualisation of Conditional Situations as a way of explaining how God answers prayers without assuming that God acts on the world after the prayer is made. My hypothesis states that God, in creating, brings about conditionals without either preventing the antecedent or bringing about the consequent. I compare this hypothesis with some rivals, notably the appeals to foreknowledge and to middle knowledge.

My main purpose in this paper is to discuss how answers to prayer are possible within the scope of the thesis of divine eternity and without reliance on middle knowledge, which many find problematic. Indeed, I show how answers to prayer are possible even if a slightly stronger thesis holds, namely that there is only one divine act (ODA).<sup>1</sup> A subsidiary purpose is to show how answers to prayer need not be violations of the natural order. I concentrate on answers to prayer but my proposal generalises to cover all cases of particular providence. You might well ask what reasons are there for believing in divine eternity, why anyone would find middle knowledge problematic, and why violations of the natural order are worrying unless we play the game of Science Says.<sup>2</sup> Answering these questions is "beyond the scope of this paper." But to those who neither find divine eternity attractive nor violations of the natural order unattractive I commend my hypothesis as not obviously worse than any other.

I call my hypothesis the Direct Actualisation of Conditional Situations (DACS). It says that the act of creation directly results in material conditional situations.<sup>3</sup> It should be uncontroversial that if DACS is acceptable then it makes answers to prayer possible even within the scope of ODA. The example I shall use to illustrate this is that of a student with a difficult choice about her career, who prays for and gets a sign. I submit that God brought it about in the one act of creation that if an agent of type X ever comes to exist and in circumstances of type Y prays for a sign then she shall have a sign of type Z. (I am for convenience using "If p then q" rather than the more accurate rendering of a material conditional as "Either not-p or q.") Such direct actualisation of the conditional situation may be contrasted with God's bringing about the conditional by preventing the antecedent or by ensuring the consequent.<sup>4</sup> So, given what God has already brought about, it is up to the student to decide whether the antecedent is false or the consequent true, by deciding whether to pray or

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not. In that way the prayer is answered with the sign.

I note two points. First, DACS does not require there to be any merely possible individuals, for the conditional concerns precise types not individuals<sup>5</sup>. Second, even though the obvious context of ODA is the doctrine of the eternity of God I allow the possibility that the divine act could occur at a time earlier than the existence of the physical universe even though its effects may occur at various different times.<sup>6</sup>

#### 1. Foreknowledge and answers to prayer

ODA excludes the common sense thesis that God answers prayer by intervening subsequent to the prayer. This leaves only two widely considered alternatives to DACS: answers to prayer based on divine foreknowledge, and answers to prayer based on middle knowledge.<sup>7</sup> I shall consider these in turn, arguing that, to be tenable, both the foreknowledge and the middle knowledge alternatives to DACS provide precedents for DACS itself, and so undermine the objection that DACS is too counter-intuitive to be taken seriously. I also argue that within the scope of ODA the foreknowledge alternative not merely provides a precedent for DACS but implies it.

First, then, let us consider foreknowledge. I take as representative of an answer to prayer based on foreknowledge the case in which prior to creation God knows that a student of a certain type will pray for a sign and, knowing this, creates the universe in such a way that there will be a sign.

To assess this foreknowledge account we need a distinction between prediction, which is foreknowledge only in a loose sense, and precognition. In both cases we have the true conditional "If the student prayed then she got a sign" but the difference concerns what would have happened if the student had not prayed. If divine foreknowledge is *predictive* then there would still have been a sign because God would have ensured there was one, as a result of an erring prediction.

Now many hold that divine foreknowledge is necessarily infallible and hence the situation in which God makes an erring prediction is impossible. This, it is widely said, trivialises the "subjunctive" conditional being considered, namely "Were the student not to have prayed then there would still have been a sign, because God would have ensured there was one, as a result of an erring prediction." My response to this is to say that not any impossible antecedent trivialises a counterfactual, but only an analytically false one. So, for example, there would be nothing amiss with "If the Morning Star had not been the Evening Star there would have been one more planet in the Solar System." If, however, this response is unsatisfactory and if divine knowledge is necessarily infallible, then I cannot distinguish divine predictive foreknowledge from precognitive foreknowledge and I need only consider the latter case.

I stipulate that if divine foreknowledge is *precognitive* then were the student not to have prayed there might not have been a sign. And to make the contrast with predictive foreknowledge clearer I ignore the possibility of God granting a sign for some other reason (eg her friend praying that she get a sign) and so restrict attention to the case in which were the

student not to have prayed there would not have been a sign.

The foreknowledge solution faces a dilemma. If the foreknowledge is predictive then, I shall argue, the prayer is not the *occasion* of the sign and hence prayers are not really answered. But if foreknowledge is precognitive then it generates problems, which may be solved but only by providing a precedent for DACS, or, within the scope of ODA, actually implying DACS. Hence, I argue, the foreknowledge solution either excludes genuine answers to prayer or is not a rival to DACS.

First consider divine predictive foreknowledge of free choices. I claim that a divine capacity to predict cannot explain how God can answer prayers. My case for this claim is first to state the prima facie argument, then to consider an apparent weakness in the argument, and finally to argue that weakness is merely apparent.

The prima facie argument for my claim is straightforward:

(1)For prayer to be answered it is necessary that the prayer be the occasion of the answer.

(2)Something is an occasion only if it satisfies a counterfactual conditional requirement, namely had the occasion not occurred then in the circumstances what it occasions would not have occurred.

(3)But if the prayer is predicted rather than precognised, then the apparent answer to prayer would have occurred even if the prayer had not occurred.

So:

(4) There is no answer to prayer

Here I make three explanatory remarks:

(i) I take it that an occasion of an action is something knowledge of which provides a reason for the agent to act a certain way, but which does not cause the agent to act in that way – unless, and only in so far as, reasons are themselves causes.

(ii) As in more central cases of direct causation the counterfactual conditional requirement could be replaced by a raising of probabilities requirement but that would not affect the argument.

(iii) The premiss (3) might seem counter-intuitive if the prediction is infallible, but it is intended to follow from the way I distinguished prediction from precognition. So if anything is counter-intuitive it is the idea of infallible divine prediction as opposed to precognition.

The weak point in the argument, if there is one, is (1), which expresses a putative necessary condition for there to be an answer to prayer. It might be objected that an instrumentalist hypothesis will suffice, namely that for there to be an answer to prayer it is sufficient that answers are *as if* occasioned by prayers. To clarify this instrumentalist hypothesis further I ask whether it is thought of as holding both at the time of the prayer or only after the answer. From the latter perspective it is as if the prayer occasioned the answer just in case there was both a prayer and an answer. Clearly that is too weak as an account of answers to prayer. But we should

take seriously the proposal that even before the prayer is made it is as if the prayer occasions the answer. This leads to the following proposed sufficient condition for a prayer to be answered:

(5) If the choice is made to pray there will be an answer – in this case a sign; if the choice is not made to pray there will be no answer.

As in the previous case a more subtle condition in terms of probabilities will not affect the discussion.

In terms of possible world analyses of conditionals the difference between the future indicative conditional of (5) and the "subjunctive" conditional of (3) is that:

(i) For the "subjunctive" conditional we consider a world in which everything prior to the choice whether to pray is just like the actual one but then a quite unpredicted choice is made not to pray. The consequent is then whatever holds in that world.

(ii) For the future conditional, we consider a world very like this except that there is a choice not to pray. Unlike the previous case this choice not to pray is made in a normal and, hence, it is being supposed, predictable, fashion. So the events prior to the choice must have differed slightly.

The future conditional requirement may well hold in a situation in which there is divine predictive foreknowledge. For if the choice is made not to pray then God predicts this and so there will be no sign.

The prima facie argument depends, then, on a necessary condition for there to be an answer to prayer. The argument fails, then if this condition is not really necessary. And, it could be said, there is a sufficient condition, namely the instrumentalist account explicated as (5), which can hold even when the proposed necessary condition fails to. Hence to make out my case I need to argue against this instrumentalist account.

One reason for rejecting the instrumentalist account of prayer is that petitionary prayer differs from other forms of prayer in that the intention is precisely to make a difference to things - and not just by altering yourself. The instrumentalist account of prayer suffers then from a pragmatic inconsistency: no one believing it is merely as if prayers occasion answers can reasonably have the intention required for a genuine petitionary prayer.<sup>8</sup> Another reason for rejecting the instrumentalist account of prayer is based on the following sort of case. Suppose the student asked for a specific sign, say an A grade. Suppose that, unknown to her, the grade has already been assigned when she prays. Suppose also that God, predicting that she would pray in this way, arranged for her to get the grade. On the instrumentalist account this is indeed an answer to prayer. Moreover, the future conditional requirement is satisfied. I hold, however, the common sense view that in such cases it is indeed too late for God to answer her prayer. For by the time the prayer is made it is true that she has the grade, so the prayer can make no difference. Perhaps it will be replied that it is true she has the grade only because God foreknows that she will pray, so were she to decide at the last moment not to pray then there would have been no sign. But that reply succeeds, if it does, only if the foreknowledge is precognitive. Examples such as these should reinforce the belief that genuine answers to prayer must be occasioned by the prayer and hence that the counterfactual conditional requirement holds.

I conclude that predictive foreknowledge is not compatible with genuine answers to prayer. Let us turn to precognitive foreknowledge. In this case we have the two problems which Hunt raises quite generally for divine foreknowledge, the Doxastic Problem and the Metaphysical Problem.<sup>9</sup> The Doxastic Problem is based on the principle that no agent can decide to do what that agent already knows will happen. There may be many solutions to this problem, but one is to restrict divine foreknowledge to knowledge of situations not brought about by God. Since such situations as the student praying for a sign entail the existence of a physical universe of a certain kind, this solution requires that the foreknown situations be conditional ones, such as that if there is a student of type X in situation of type Y then that student will pray for a sign. God, foreknowing this and other conditional situations, could therefore create in such a way that there will be a student of type X in situation of type Y and there will be a sign of type Z. Thus the Doxastic Problem shows at most that foreknowledge be restricted to conditionals, not that God directly actualise conditional situations, which is the position I am defending. Nonetheless even so the proposed solution to the Doxastic Problem supports DACS, by undermining the objection that there are no such things as conditional situations, but only categorical ones. For if there were no such things as conditional situations how can God know them without knowing about their antecedents or consequents?

To illustrate the Metaphysical Problem, suppose the existence of the student who prays for a sign is itself the consequence of an earlier answer to prayer - perhaps her parents had a surfeit of sons and prayed for a daughter. Then the act of creation by which, among other things, the student's prayer is answered is based on foreknowledge that the prayer is made, which itself depends on the prayer being made and hence on the act of creation by which, among other things, the parents' prayer was granted. Unless there are multiple acts of creation this threatens circularity. But ODA implies there is only a single act of creation. To avoid circularity, we require God to create a situation in which the prayer is answered if the appropriate circumstances do occur. That is: If a person of type X comes to exist and be in situation of type Y then there will be a sign of type Z. Bringing about such a conditional situation depends only on an item of foreknowledge which is itself independent of creation, namely that if a person of Type X comes to exist and be in situation of type Y then that person prays. This saves the foreknowledge account of prayer, but only by positing DACS itself.

#### 2. Middle knowledge to the rescue?

Middle knowledge would enable God to know what a precise type of

person in a precise type of situation would do without having to know whether there is a person of that type. My aim in this section is not to argue directly against middle knowledge but to show that the middle knowledge account of answers to prayer also provides a precedent for DACS.

Whether or not it deserves to be called middle knowledge, a certain amount of knowledge of counterfactuals would follow from precognitive foreknowledge. For example God could foreknow that on all the many other occasions in which the student has to make an important decision she prays for a sign. Knowing this God would infer that were she to be in the situation in which she has to decide on her career, then she would pray for a sign. In that case God could use this knowledge to bring about a world in which the sign is given.

The resort to precognitive foreknowledge threatened circularity. The situation is at least as bad for middle knowledge which depends on foreknowledge. For the decision to create the world in such a way that there is a sign depends on the middle knowledge which depends on the foreknowledge of what a person of a certain precise type will do, which depends on the world being created in such a way that there is a person of that type X. If we avoid this circularity by saying that both the foreknowledge and the creation are of conditional situations then we have saved middle knowledge only by accepting DACS.

Clearly if middle knowledge is to be a rival to DACS we need an alternative account of it. Now we should reject the absurd hypothesis that individual essences make free choices in a way that is logically prior to their instantiation as actual creatures - as if God sees whether we freely do accept grace before deciding to reward us by creation. For want of an alternative, I think that mesocognitivists are committed, then, to saying that the counterfactuals of creaturely freedom are true without depending for their truth on other, more fundamental, facts either about the creatures or God. This, which I take to be Plantinga's position, I call ICCF (independent counterfactuals of creaturely freedom).<sup>10</sup> Given that there are these unsupported facts it then follows from divine omniscience that God knows them. And perhaps we should not ask how.

My present task, then, is to argue that ICCF provides a precedent for DACS. In both cases we have a conditional situation which does not depend on other occurrences, although it constrains them. On ICCF the conditional, which is a "subjunctive" one, is known but not brought about by God. On DACS the conditional, which is a material one, is brought about by God. If DACS is problematic then so is ICCF. Indeed because there is no explanation of how the counterfactuals of creaturely freedom come about I judge ICCF to be the more problematic of the two.

#### 3. In defence of the Direct Actualisation of Conditional Situations

I have argued that DACS is no worse than the appeal to either foreknowledge or middle knowledge, because both those appeals provide a precedent for DACS. But that might be construed as a criticism of the foreknowledge and middle knowledge accounts of prayer, rather than, as I hoped, a defence of my proposed account. I shall, therefore, now offer an independent defence of DACS.

Why should there be any objection to God directly actualising material conditional situations? As far as I can see the objection is that for God to actualise a situation that situation must be possible. So, for example, we might well have doubts as to whether God could create persons who existed only at the weekends. And the reasons for these doubts would be the further doubt that the situation in which persons go out of and come into existence is even possible. To defend DACS, then, I need to consider situations indeterminate between the consequent of a conditional and the negation of its antecedent. And I need to argue that such situations are possible. I begin my defence with three arguments which are ad hominem in the Lockean sense of being audience-specific.

First, a possible Hume-inspired but non-Humean account of laws of nature is that they are merely those conjunctions of weakly necessary conditional situations which we human beings properly classify together as exhibiting a suitably simple form. Theists will probably go on to give an account of weak necessity in terms of God's creative act.<sup>11</sup> Such an account will explain how laws support counterfactuals and distinguish them from accidentally true regularities which we might mistake for laws. An ad hominem argument, then, to those who find such an account congenial is that it requires realism about conditional situations.

Another ad hominem argument is to those who are inspired by Heisenberg's Uncertainty Principle to propose that the uncertainty in the position and momentum of a particle reflects a lack of determinacy.<sup>12</sup> For in that case we could set up situations in which if a particle has momentum with magnitude in set A then it goes through one slit, if in set B it goes through the other. We could do this without the situation specifying whether the magnitude was in A or B. Hence quantum mechanics, thus interpreted, itself implies DACS.

The third ad hominem concerns van Inwagen's account of chance events.<sup>13</sup> He considers God to bring about disjunctive situations without bringing about either disjunct. Likewise DACS requires God to bring about disjunctive situations without bringing about either disjunct. To be sure, in the case of DACS one disjunct involves a negation. Even so, any who are persuaded by van Inwagen, as I am, are half way towards accepting DACS.

In addition to these ad hominem arguments I defend DACS by sketching what I call the Increasing Determinacy account of creation.<sup>14</sup> It is based on time-indexed possibility. Prior to creation there is not a state of determinate absence of the physical. Rather all metaphysically possible worlds are still possible, so what is then actual is totally indeterminate between all possibilities. But creation restricts the range of worlds so that far fewer are still possible. (Here, it should be noted, worlds are spatio-temporal entities – the act of creation does not just restrict what happens at some putative first moment of time.) Likewise on those occasions in which we act freely we too restrict the range of what is still possible. Thus each free act contracts the range of worlds so that fewer are still possible. On this account what is actual at any time is necessary at all later times. Given ODA it follows that at creation the history of our world was indeterminate precisely in so far as God initially left matters up to creaturely freedom and chance.

It is now quite easy to see how God would actualise a material conditional situation without either ensuring the consequent or preventing the antecedent. God in the one act of creation restricts the range of worlds still possible to those in which either the antecedent will be false or the consequent will be true. But God includes in the range of still possible worlds some in which the antecedent will be true and some in which it will be false.

#### 4. Is answer to prayer supernatural?

I have been defending DACS as a way of showing how even an eternal God, who acts only once, can answer petitionary prayers. I now argue that answers to prayer need not be supernatural. Clearly, if ODA holds then no answer to prayer is supernatural in the sense of involving a divine intervention subsequent to the act of creation. But that is quite consistent with there being events which are supernatural in one of the following senses :

(i) Events which when conjoined with earlier events violate a law of nature.

(ii) Events whose probability of occurrence in the circumstances is significantly lower than other events or situations described at the same level of detail.

The clause "at the same level of detail" is required because in many situations every outcome described at the level of detail of the answer to prayer is improbable, just because there are so many outcomes. The second sense is important because contemporary physics would allow for instance the water at the marriage feast of Cana to be turned into wine – it is just highly improbable.

The point of my arguing that answers to prayer are not supernatural occurrences is that I grant there is a presumption against the supernatural in either of these two senses, although I think the strength of this presumption is often exaggerated.

Here I rely on the Increasing Determinacy account of creation, described above. Consider the set of worlds which are left still possible by the act of creation. Call this  $P_c$ . I shall now put two constraints on  $P_c$  which are jointly sufficient for there to be non-supernatural answers to prayer. The first is that  $P_c$  be a subset of  $W_N$ , the set of worlds in which the actual laws of nature hold and in which there are no highly improbable signs which could reasonably be taken as answers to prayer. To state the second constraint consider all the petitionary prayers which God ensures will have answers if they are made. I require that for each one of them  $P_c$  contains worlds in which the circumstances occur in which the prayer might be made, but in which the prayer is not made, and in which there is no answer. I also require that  $P_c$  contains worlds in which the prayer smade and there is an answer. These two conditions are sufficient to ensure that many petitionary prayers have been answered in a non-supernatural fashion.

I can think of two objections to my proposed account. The first

objection only holds if the laws of nature are deterministic. For then the worlds in  $W_N$  which differ now have always differed in some respects. Hence, if, as I assume, it was still possible a year ago for the student to pray this year for a sign and it was still possible for her not to pray, then, assuming deterministic laws, it was still possible a year ago for events a million years ago to have been such as to lead up to the prayer and still possible for them to have been such as lead up to the absence of prayer. In this way we arrive at the counter-intuitive consequence that the past events can be indeterminate. This difficulty is partially removed by noting that even deterministic laws allow that very small differences in the past result in quite significant differences later on. So the past indeterminacy is not such as we humans would have noticed. Nonetheless I grant that the occurrence of past indeterminacy is counter-intuitive. If the laws are not deterministic then this objection lapses.

The other objection is that there might just not be sufficient variation in the non-supernatural worlds for there to be enough worlds to ensure that in all, or at least most, cases of prayer there are two outcomes depending on whether the prayer was made or not. Suppose there are N prayers. Then it would seem there need to be at least 2<sup>N</sup> non-supernatural worlds corresponding to the combinations of prayer and absence of prayer on N occasions. N is presumably very large, so it is not silly to worry about whether there are enough possible non-supernatural worlds for God to ensure that the outcomes depend on whether there is prayer or not. Fortunately some, admittedly rough, estimates suggest that the fine tuning of even as little as a milligram of hydrogen can be performed in sufficiently many ways to ensure possible non-supernatural worlds with appropriate outcomes for, say, 1,000 petitionary prayers a year for an average population of 100,000,000 over a million years.<sup>15</sup> Each planet, of course, condenses out of millions of millions of grams of dust, so the fine tuning of that cloud contains enormously more variation than required.

I conclude that the one act of creation can, without any supernatural events, bring about material conditionals so that every free choice has outcomes depending on the choice in a way ordained by God. This applies in particular to answers to prayer. I acknowledge, however, that the combination of deterministic laws with the requirement that answers to prayer not be supernatural results in the counter-intuitive ascription of indeterminacy to past events.

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<sup>\*</sup> A shorter version of this paper was read to the 1996 Pacific Regional Meeting of the Society of Christian Philosophers (Seattle April 19-20). I am indebted to all who contributed to the discussion on that occasion. In addition, I am indebted to Linda Zagzebski and an anonymous referee for some extremely helpful comments. 1. An eternal God might act more than once provided there was no temporal relation between the acts. But another thesis of classical theism, divine simplicity would exclude this.

2. In the game of Simon Says various orders are to be obeyed if and only if prefixed with the words "Simon Says."

3. Or, if that is God's purpose, material biconditional situations. For simplicity of exposition I consider only material conditionals. Similar hypotheses are obtained if we consider other kinds of conditional, for instance that necessarily the antecedent is false or the consequent true.

4. A further possibility would be that God ensures the material conditional by bringing about a law of nature which implies that conditional. Since no one has proposed this account of prayer I do not need to object to it in detail. It suffices to say that such laws would turn prayer into a kind of magic and, moreover, be intolerably complicated.

5. I am indebted to Barry Miller for drawing my attention to the problems of merely possible or future individuals. See his *From Existence to God* (London: Routledge, 1992) ch. 3. See also Robert M. Adams, "Actualism and Thisness," *Synthese*, 57 (1981): 3-42. In this paper I am quite neutral about whether there are future individuals.

6. For an account of how this is possible even for an infinitely old universe see my *God without the Supernatural*, (Ithaca: Cornell University Press, 1996) ch 2.

7. A variant on middle knowledge would be to rely on what Howsepian has called middle action. I leave it to readers to adapt my discussion of middle knowledge to middle action. See A. A. Howsepian, "Middle Actions," *International Journal for Philosophy of Religion*, 34, (1993):13-28.

8. This is inspired by William Alston, "Divine-Human Dialogue," *Faith and Philosophy*, 2 (1985): 5-20, especially Section Eleven. I have to admit, though, that DACS turns prayer into the analog of a telephone answering system ("Press One if you want the times of examinations; press Two if you want information on scholarships; etc.") As far as I can see if God is eternal the nearest thing to a *genuine* dialogue with God would be dialogue with God incarnate.

9. See David P. Hunt, "Divine Providence and Simple Foreknowledge," *Faith and Philosophy*, 10 (1993): 394-414, especially 398.

10. In *The Nature of Necessity* (Oxford : Clarendon Press, 1974: 184-90.) Alvin Plantinga discusses Mayor Curley's "transworld depravity" in such a way that it would be puzzling if God knew of it by knowing something else. But if they depend on other facts for their truth why would not God know them by knowing these other facts?

11. The simplest theistic account of weak necessity is that everything directly brought about by God in the one act of creation is weakly necessary. But that account only succeeds if we assume that God leaves a lot up to either chance or creaturely freedom. A more flexible account might be obtained by adapting Del Ratzsch's account in "Nomo(theo)logical Necessity," *Faith and Philosophy*, 4, (1987): 383-402, so as to make it compatible with ODA. We could then say that things are weakly necessary if God brought them about in the one act of creation and would still have brought them about even if God had decided to create a world differing from this one only in the different outcomes for free creaturely choices. (I am using the phrase 'weak necessity' rather than Ratzsche's 'natural necessity' to avoid begging questions against the supernatural.)

12. I defended such an indeterminacy interpretation in my Quantum

Metaphysics (Oxford: Blackwell, 1988) ch 7.

13. See Peter van Inwagen, "The Place of Chance in a World Sustained by God," *Divine and Human Action*, ed. Thomas V. Morris, (Ithaca: Cornell University Press, 1988): 211-235.

14. See my *God without the Supernatural* (Ithaca: Cornell University Press, 1996): 83-5. See also my, "Physical necessity and the passage of time" in Riggs, P. J. (ed.), *Natural Kinds, Laws of Nature and Scientific Methodology*, Australasian Studies in History and Philosophy of Science, (Dordrecht: Kluwer, 1996).

15. This leads to an estimate for the number of choices to pray of 10<sup>20</sup>. Call that N. Taking the answers to prayer to be commonplace events, the chance of a given outcome being appropriate would be, say, 1 in 100. So the chance of a non supernatural world chosen at random having a sequence of N appropriate outcomes for a given sequence of N choices is 1 in M where  $M = 100^{N}$ . If we now choose K such worlds at random the chance of there being among them ones in which for all sequence of choices we have appropriate outcomes can be calculated, provided we assume probabilistic independence. It turns out to be 1 - exp(-K/M). For instance if K = M it would be about 2/3. If we put K = 100M the probability will differ from 100% by a negligible amount. So it is virtually certain that 100M non supernatural worlds chosen at random and independently will contain all those needed for the divine purpose in ensuring appropriate outcomes for free creatures on Earth. Now 100M is the enormous number, 100<sup>N+1</sup>. Nonetheless it is still small compared to the number of non supernatural worlds. For suppose we consider a gram of hydrogen and consider not the whole continuum of its states but just those which occur if we think of each molecule as moving either up or down. The number of states is then 2<sup>A</sup> where A is Avogradro's number  $6 \times 10^{23} = 60,000$ N. So  $2^{A} = 2^{60,000N}$ , which is vastly greater than  $100^{N+1}$ .