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Response to Davis

I am very glad that Professor Davis has addressed the question, which I have raised in the work cited (nn. 1,2),¹ of what God can coherently be said to know—broadly, the question of God's omniscience—if one accepts, with most quantum physicists, that there is an inherent, ontological indeterminacy in quantum events, that is, that *there are no 'hidden variables'* (n. 7—I shall call this premise **D**). He gives a fair and accurate account of my proposal, so there is no need for me to reiterate it. I shall confine my discussion to the inference of God's *self*-limited omnipotence from quantum indeterminacy—although the argument could in my view indeed be extended to human free will too—because the inherent indeterminacy of human decisions is less widely agreed and, even among Christian thinkers, has frequently been much (I would say too much) qualified. So I set on one side, for the present discussion, the kind of speculations I have made (nn. 14, 15) concerning the implications of my proposals in relation to any general openendedness in the natural order and to human freedom.

Following R. G. Swinburne² (and many others), I defined³ '*omniscience*' as *having knowledge of whatever it is logically possible to know* (**O**). I do not regard this to be, as Davis suggests, a redefinition for 'what it is logically possible to know' must be taken in this context to include already 'all that could conceivably be known', since to conceive of anything logically impossible would inevitably lead to incoherence from the outset.

The question of what it is logically possible for an omniscient God to know about the future⁴ is, of course, closely linked with one's view of God's relation to time⁵. The possibilities appear to be:

1 Reference to notes (n.) refer to Davis' article. Such references are often indirectly references to his quotations from my writings. TSA = *Theology for a Scientific Age* (SCM Press, London, 1993, second enlarged edition).

2 R. G. Swinburne, *The Existence of God* (Clarendon Press, Oxford 1979) p. 8.

3 Cf. TSA, p. 92. I shall call this definition **O**.

4 'Future here refers to the future in the space-time framework of reference relevant to the events under consideration. The *omni*-presence of God to all such frameworks means that there is no ambiguity of a relativistic kind in what God may regard as the "future", since God can be present to each event as it occurs in the time-scale of its own framework of reference—however the event might be recorded temporally by observers in other frameworks of reference as they receive the signals in the light-cone generated by that particular event.'

5 It also involves making a distinction between the inherent changelessness of God's nature, character and purposes ('God's timelessness' in this sense only) and the possibility of God's knowledge of God's ('personal') relations to humanity changing. I think Davis' and I are in agreement in thinking this distinction is valid.

Premise F_1 . *The content of the future already exists in a strong sense—that is, four-dimensional space-time models, with their ‘world-lines’ of identifiable entities, are taken literally. ‘Future’ events are already located in the four-dimensional space-time, even if human limitations, including those of our relativistic horizons, prevent observation of them.*

Premise F_2 . *The future does not exist⁶, it has no ontological content available to be known and, therefore, F_3 ; all that can possibly (logically possibly) be predicated of the future is by inference from knowledge of antecedent states and the relevant governing laws.*

The arguments may then be represented thus.

(1) By F_1 (which I do not accept):

(1a) $O + F_1 \rightarrow I$, *an omniscient God can and does know the actual content of all future events because they are all ‘there’ available to be known.*

(1b) $D + I \rightarrow II$, *an omniscient God knows the outcome of quantum events that are ontologically indeterminate since these outcomes are already ‘there’, in the future to be known.*

(2) By F_2 (which I do accept):

(2a) $O + F_2 \rightarrow III$, *an omniscient God cannot know future events directly since there is no such content, no ‘fact of the matter’, to know. However,*

(2b) $O + F_3 \rightarrow IV$, *an omniscient God knows all that can (logically) possibly be predicated of the future by inference from total knowledge of (i) all the relevant states antecedent to the event in question, and (ii) the laws/rules governing the succession of events in the system under consideration. In the case of quantum events the laws govern succession only of probabilities, hence:*

(2c) $D + IV \rightarrow V$, *an omniscient God can know only the probabilities of the outcomes of future quantum events (e.g., the probabilities of particular radium atoms disintegrating in the next millisecond).*

If God creates the world to be such that this (V) is the case, and God could have created it to be otherwise, then the conclusion must be that God’s own self has thereby limited God’s own knowledge of the outcome of future, quantum events. Hence my talk of the ‘self-limited omniscience of God’. (I actually think⁷ this concept is also essential for the coherence of the concept of genuine, ontological human freedom, but I leave that aside for the purposes of this note). The whole idea of ‘self-limitation’ is not an innovation in Christian theism. God’s omnipotence—the ability to do anything it is logically possible to do—has always been regarded as ‘self-limited’ with respect to God’s permitting evil which, logically, God could suppress. It has also been widely linked with the whole concept of *kenosis*, of self-emptying, of deliberate self-restriction for a loving purpose⁸, in the Incarnation (cf., *Phil. 2*, v. 5–8).

⁶ Q.v., TSA, pp. 128–133, and corresponding end notes, for references to other authors with this view.

⁷ Together with Keith Ward, *Rational Theology and Creativity of God* (Blackwell, Oxford, 1982) p. 151–2; quoted in TSA, p. 129.

⁸ This notion of *kenosis* has been much emphasised and elaborated by N. Murphy and G. F. R. Ellis in their *On the Moral Nature of the Universe* (Fortress Press, Minneapolis, 1996).

So much by way of explanation and justification of my own position. Its relation to Davis' proposal turns, I suggest, on the relation of my proposition F_3 to his advocacy of a revised form of Molina's 'middle knowledge', Davis' 'perceptual' model (n. 31). He writes 'In this model of God's action in the world, God, at any given time T_1 , "sees" the tendencies and potentials in a creature X , e.g., a radium nucleus, and, because of this comprehensive knowledge of both the essential nature and potentials of the creature, and of the causal nexus in which it is embedded, knows that nucleus X is about to disintegrate at some time T_2 '. I am not clear what his terms 'essential nature and potentials' can mean when they are applied to entities, such as a radium nucleus, undergoing a transition governed by quantum mechanics. Presumably these terms refer to what transitions such an entity is bound by its own nature to undergo. But this is the very point at which adherence to **D** entails that the entity in question (e.g., a radium atom) possesses ontologically, in its essence, only a certain probability⁹ of undergoing the transition in question (e.g., nuclear transformation). So, to use Davis' term, God's 'middle knowledge' can be only of the *probability* of the quantum event (such as the decomposition of a radium nucleus), since that is all its 'tendencies and potentials', as he calls them, amount to—that is what our common rejection, **D**, of 'hidden variables' means¹⁰. So, oddly enough, I find his model leads to my own conclusion!

Finally, I am not at all clear that it is helpful in this context to talk of a 'biblical theism' related to these philosophical issues. In regard to such questions as are raised here, the biblical literature is not coherent or consistent—it is not intended as a philosophical treatise but as a record of human experience of God, with all its ambiguities. Otherwise how could so many contrary views arise among Christian thinkers, all seeking to be faithful to a literature itself rooted in a culture from which the whole notion of 'natural laws' was absent? Respect for the biblical tradition cannot of itself solve these essentially new questions raised in our times for our contemporary comprehension of the God to the experience of whom the Bible testifies.

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9 Davis writes 'In the case of the radioactive nucleus, the "causal nexus" is constituted by the space-time manifold, the energy fields, and the laws of quantum mechanics'. But '*causal nexus*' is a very ambivalent term in this context if one accepts **D**, as Davis says he does. The 'laws' of quantum mechanics connect only *probabilities* of events occurring. Recognition of this seems to me to vitiate Davis' criticisms of Keith Ward since the 'potentiality' of a system subject to quantum mechanics can refer only to the potentiality of a certain *probability* of a quantum event being instantiated at a particular time, and not to the potentiality of the event's *actual* occurrence. That is what **D** means, radical though this would be for any of the previous discussions Davis quotes (those of Aquinas, Molina, Craig and Garrigou-Lagrange).

10 Davis claims that 'God, knowing both the states internal to the nucleus and its external environment and governing laws, can, at any given moment, "see what the nucleus is about to do"'. But how can God know *that* if (as **D** asserts) there are no 'hidden variables' and so no underlying laws actually *determining* that a particular nucleus will disintegrate at a particular time?