The Qualia Problem, the Cable Guy Paradox and the Conway-Kochen Theorem

Abstract
The Free Will Theorem of Conway and Kochen (2006) does not appear to fulfil its claims. The possibility of other mathematical and AI simulations, quantifications and descriptions of free will, emotions, feelings, physiological drives and the like is also briefly discussed with a view to clarifying that fact.

Recently Conway and Kochen (2006) produced a paper called "The Free Will Theorem". In the event, they claim therein "If indeed there exist any experimenters with a modicum of free will, then elementary particles must have their own share of this valuable commodity."

Now this should be an important paper and its publication was widely heralded as for example in the "Daily Princetonian" in 2004 where Nobel Prizewinner Phillip Anderson said "I think it's a positive development. I always thought the study of hidden variables should go, anyhow." Strong stuff. And now we have the actual paper, as distinct from the newspaper blurb.
I expect the paper will be widely read and could be used for many things, including attempts to prove that people do not have free will at all. This is even politically important as clearly it could in some way be used to excuse such practices as suicide bombing, a practice which Iranian and American psychologists (Pyszczynsk and Abdollahi 2006) now seem to claim is in some sense endemic in the psyches of both Americans and Iranians.

Now I will look at the Conway-Kochen Free Will theorem in a mildly roundabout way. I will start by considering something that looks a bit different, namely the Cable Guy Paradox (Hajek 2004). Some people could say that the Cable Guy paradox is only a pseudo-paradox but anyway we will still consider it.

The Cable Guy Paradox

Before beginning my discussion of the Cable Guy paradox I have two important points to make.

Firstly, that the history of paradoxes suggests that, over the centuries, feelings are often different as to whether some so-called paradox really is a paradox or is really important or not. A case in point is Zeno's Paradoxes which are undoubtedly regarded as important today but whose value, relevance and meaning have been considered of variable merit or relevance over the centuries. We can look as far back as Parminedes and the Pythagoreans or as far forward as Chaitin, Russell and Grunbaum on the subject of Zeno!

Secondly, specifically regarding the Cable Guy paradox, we are primarily concerning ourselves in this essay with the two persons who make the wager -the wagerers- and their feelings during the matter. My view is that, whether we should consider feelings or not during the posing of the paradox, that having set up the paradox then during the morning is the time where the wagerers can be expected to have one view and the afternoon another view. And if, like me, you are not a person who likes a gamble, in Hajek's version you will prefer afternoon (as Hajek does) and in Restall's version you will prefer morning (as Restall appears to do). I feel that it is perhaps an unwarranted deduction at this juncture to deduce that neither Hajek nor Restall are themselves very keen on gambling (I do not know either) but it is an interesting deduction to be able to consider making so easily from the nature of a paradox.

The cable is to be installed by the cable guy during the morning between 8am and 12noon or the afternoon between noon and 4pm. Before 8am, we bet on whether he'll come in the morning or the afternoon. Hajek suggests that you should perhaps choose the afternoon as - very roughly summarising - it can be conceded that during the morning you will have less time left (perhaps an infinitesimal amount less if the cable guy is very early) which can thus make you regret a morning choice. This follows Hajek's own 'Avoid Certain Frustration Principle', stated here as given but later revised in the same paper (Hajek 2004): "Suppose you now have a choice between two options. You should not choose one of these options if you are certain that a rational future self of yours will prefer that you had chosen the other one – unless both your options have this property." However Greg Restall (2006) points out that "I don't know that you won't mug me, put me in the cupboard and mind the house without my company. Furthermore, you might record the front door with your camera, and then, after 4pm, let me out, and play the recording backwards. In that case, there's some interval of time in which I'll prefer having chosen the morning rather than the afternoon, by completely symmetric reasoning."

From our present standpoint what seems to be important is that we have actually simulated an emotion (call it regret, perhaps) and related it directly to a probability. In the Hajek version of the paradox, regret will alter the weighting of probability of choosing morning rather than afternoon, which on the basis of the proposed experimental setup would seem to be equal from a practical point of view, leaving aside the idea that the proposed time interval was an open interval in the morning and a closed one in the afternoon. So we have a physical measure of regret and an apparent paradox that we should wager on afternoon, despite the idea that the initial mathematical odds look the same for morning and afternoon. In the Restall version of the paradox, afternoon could clearly be a better option. We could deem the Restall situation unlikely but since we do not have specific figures as to how we should weight regret into the wager - the form of any expression might be complicated - we are simply left so far with an uncertainty effect due to possible (video) time reversal.

But odds which apparently are mathematically identical are changed on the basis of emotional views in a way which should be quantitative.

How can we place an actual measure on regret in such thought experiments ?

Sanders (1989), like many others, has tried to contrive a method. Sanders in fact focusses on a cluster of actions to do with ownership or possession of property but is able at any rate to show that the logic so expressed is able to handle many sets of circumstances. So in principle we are likely to be able to give a weight to emotion, and thus to calculate some mathematical results for the Cable Guy paradox which may differ from equal mathematical odds for morning and afternoon. So we undoubtedly can have, in principle, a mathematical way to handle regret. Of course, however sophisticated and accurate the methods we use for this become, we know that we are still just doing mathematics and logic. We are dealing with the map, not the country, as it were. In the real country, as I point out below, we seem to need quales, at least. As Goguen (2005) points out importantly and in more detail , "In Western culture, mathematical formalisms are often given a status beyond what they deserve." And even you wanted to give such formalisms a high status, you would have to give good reasons which generally do not seem to be available at this time. Goguen (2005) suggests that there are a number of objections to willy nilly equating the map to the country in such cases. In my opinion not the least of these is Harnad's symbol grounding problem.

Now we may also envisage the scenario where the Cable Guy and the person waiting for cable installation are respectively replaced by a laboratory experiment and a mouse - or indeed the mouse could even be replaced by one of Dennett's bats. In that example if we wanted to, we could even

take the view that Dennett's approach rather than the use of qualia is correct, and we would not lose our argument by using some modern form of multiple drafts and not qualia for the reason that when we speak of free will for animals in cases like Dennett's case we may well be speaking of anthropomorphisms but we are still speaking of real possible scenarios or parables. However this is one case where the qualia approach looks simpler to me so I stick to that. It is reasonable to say that we can imagine a horrified mouse, whether anthropomorphically horrified or not. It is completely unreasonable to consider N horrified particles with N a very small number (possibly unity), anthropomorphically or not as the idea of N horrified particles would fall well outside the common or normally scientifically accepted view or parable (as Turner (1996) might call it) and totally outside the concept of freewill.

What has this got to do with the Conway-Kochen Theorem ?

Specifically, Kochen and Conway claim to show that particles' responses to a certain type of experiment are not determined by the entire previous history of that part of the universe accessible to them. But, even given Kochen and Conway's assumptions which I leave for others to debate at this time, all Kochen and Conway then seem to do is to allow an element of random behaviour to the response of the particles, a common enough assumption in mathematical physics, which has nothing to do with giving the particles free will ! Free will simply does not fit into the parable. Conway and Kochen do not appear to be singing from the same hymn sheet as everyone else.

We already know from the Cable Guy paradox that apparently identical mathematical odds can lead to differing appropriate odds in a wager due to emotional effects and we even know roughly (we think) how to calculate mathematically such odds. But given for example the view of Ramachandran (2003) "Obviously self and qualia are two sides of the same coin. You can't have free-floating sensations or qualia with no-one to experience it and you can't have a self completely devoid of sensory experiences, memories or emotions", obviously these emotional effects involve personality and qualia or whatever theoretical approach, probably even Dennett's approach, you want to replace them with. What these 'selves' most certainly do not appear to be, is simply small systems of partially random moving particles and little or nothing more. Such systems cannot be dignified as relating to or substituting for, quales. Quales are still a bit of a mystery and Conway and Kochen's particles do not describe them in any way whatsoever. If we did not want to tackle the matter from the qualia angle it seems likely that similar unsurmountable difficulties would be encountered however we go about things. Simply, Kochen and Conway have not established the equivalent of free will for particles.

Indeed if we wish we can simply take their position as being an argumentum ad ignorantiam fallacy, that is that they assume that since something has not been proven false, it is therefore true. The classic case is that "Since you cannot prove that ghosts do not exist, they must exist". They are left with a few snippets like Conway's 'Game of Life', which is much less universal and broad than their present cases, and even the 'Game of Life' has no true anthropomorphic qualities that anyone can detect. But they are the ones who have to prove their point at this juncture, not for others to defend themselves against their extremely vague hypotheses. Certainly if they could give a serious proof or substantial observation, most people would be happy to consider it, but the problem is from their standpoint that there is no reasonable suggestion that apparently randomly moving particles do imply free will. And they do not prove or even explain how or that such particles do imply free will. There is nothing to build on in what they actually say.

Donald (2006), who as it happens espouses a many minds theory, seems to have summed the matter up correctly yet again by saying: "They deny that what they mean by free will is simply neural

randomness. They assume instead the existence of an `active kind of free will that can actually affect the future' ", but they do not explain what sort of extra-physical homunculus can make active choices without input from a physical past." The 'extra-physical homunculus' which Conway and Kochen now seem to have tried to leave us with as our unwanted and un-needed fardel can, we might well hope, be dispensed with eventually - if indeed we need to consider it at all.. For example, it might be dispensed with by using category theory as I referred to in previous blogs or indeed by using many minds theory. But I think that the philosophical ideas posed by Kochen and Conway (2006) specifically on free will may not merit consideration as such.

So without a method like Donald's many minds, or indeed my Category Theory approach or even some other totally different approach, we can be still left (without good philosophical reason) by Conway (2006) with a lot of problems surrounding free will and none of them whatsoever actually resolved by Conway (2006). Even with either Donald's (2006) approach or my approach, we are certainly still left with a lot of things to do about free will but Conway (2006) has done none of them.

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