

## **"Does God Interact with his Suffering World?"**

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### **1. Introduction**

When Christian theology tries to think about God's interaction with the world, it has to find a path between two unacceptable extremes. One is a picture of God interacting with the world as a sort of cosmic tyrant, the one who causes absolutely everything to happen. Some Christians have taught perilously close to this, perhaps not John Calvin himself, but certainly some of his subsequent followers. But that can't be right. The Christian God is a God of love, and the God of love cannot have a creation that is simply a divine puppet theatre, of which God is the great cosmic puppet master. The gift of love always has to be the gift of some kind of appropriate freedom to the object of love: parents know that; we allow our children to grow up and be themselves, and in the same way God allows creatures to be themselves.

But the other extreme would be equally unacceptable. That is the God of deism -- namely, the God who simply sets it all spinning then stands back to watch it happen, perhaps with curiosity, perhaps with indifference. But of course that couldn't be the God of love either, so Christian theology has to steer a course between these two extremes and in my view it has to speak of a God who interacts with the world but does not overrule creation. Getting that balance right might seem impossible and obviously it is a tricky matter, but that's what we are going to try and think about here this evening.

If God does interact with the world, the immediate question is: O.K. why doesn't God do a bit more of it? When we look at the world, we see the disease and disaster that is present and there seems plenty of scope for God to do a bit more to deliver people from suffering. So the main question for divine action is the deep problem of suffering, which I think is the most difficult problem for religious belief -- the one that holds more people back from religious belief than anything else and troubles those of us who are religious believers more than anything else. These two problems are, in a sense, inseparable from each other. We are going to see whether we can make some modest progress. Now I don't suggest for a moment that in 45 minutes I can dispose of all the problems -- they are too deep for that to be possible -- but I do think we can make some modest progress and interestingly enough, science, I think, is helpful to us in trying to work something out about this.

### **2. Suffering as the Shadow Side of Evolution**

The part of science that is most helpful to us about suffering is, ironically, actually the part that many people think signifies the final parting of the ways between science and religion. It is the theory of evolution that I suggest is helpful to us in thinking about the problem of God's interaction with the world. There is a historically ignorant notion of what happened in 1859 when Darwin published his great book 'On the Origin of Species', namely that all the scientists shouted "Yes! Yes! Yes!" while all the religious people shouted "No! No! No!" That account isn't true on either side. There were, for example, initially some negative reactions on the scientific side: Sir Richard Owen, who was the great comparative anatomist of the day, never accepted Darwin's ideas, partly from perhaps a submerged professional rivalry but also because of genuine difficulties which centred for him, and many other scientists, on the origin of the small differences between one generation and the next, to which Darwin had to appeal in order to get natural selection going. Genetics was then unknown. A few years later, it was discovered by the Austrian monk Gregor Mendel, but it was published in a rather obscure journal and so remained unnoticed by the rest of the scientific world until the 20<sup>th</sup> century. So on the scientific side there were distinct problems, which were only fully resolved in the 1930's by the neo-Darwinist combination of evolutionary thinking and genetic insight.

And on the religious side of things, most interestingly, there were people who from the start welcomed Darwin's insights. One of those was the English clergyman and novelist, Charles Kingsley. Kingsley very soon coined the phrase that I think encapsulates perfectly the way theologically we think about the undoubted fact of an evolving world. What Kingsley essentially said was this: 'No doubt God could have snapped his divine fingers and brought into being a ready-made world, but Darwin has shown us that God has done something much cleverer than that. By bringing into being a world with evolution in it, God has made a world in which creatures can "make themselves". God has endowed the world with very great potentiality, but the way that potentiality emerges into actuality is by the shuffling exploration of natural selection, in the course of which creatures make themselves, thereby generating an astonishing three and a half billion year history, which turned the world that was already a billion years old and had bacteria in it into a world into a world which today contains you and me.'

And when you think about it, it seems to me that a world in which creatures make themselves in that way is a greater world than a ready-made world would have been. It is the gift of love that not only can creatures be themselves, in the sense that I have been trying to indicate, but they are also allowed to make themselves. That world is a greater good than a ready-made world, but it is a world that also has an inescapable shadow side to it. The shuffling exploration of happenstance, of chance if you like to use that word, is really what an evolutionary process is. Its explorations may, and indeed do, bring to birth great fruitfulness, but they inescapably also generate ragged edges and blind alleys. We can't have the one without the other. And one can make that point precisely by thinking about what has been the engine driving that amazing three and a half billion year history of life here on earth. The engine driving it has of course been genetic mutation: genes in germ cells mutate and produce new forms of life, which then the processes of natural selection act on, to sift and to preserve. But if germ cells are able to mutate in that sort of way, it is inevitable also that somatic cells, body cells, will also be able to mutate genetically, and sometimes when they do they will become malignant: you can't have the one without the other.

And that, I think, is a mildly helpful insight for us. Of course the existence of cancer is a deeply anguishing fact about the world and I don't wish for a minute to diminish the feeling of anguish or indeed anger that we feel at that fact, but at least the scientific insight of evolution shows us that it is not gratuitous. It is not something that if God was a bit more careful, or a bit less callous, could easily have eliminated. It is the inescapable shadow side of a world in which creatures make themselves.

Quite frankly, we all tend to think that if we were in charge of creation we would have done it better. We would have kept all the nice things, the sunsets, the flowers and that sort of thing, and we would have got rid of all the nasty things, the disease and disaster, in the world. But the more science helps us to understand how the world actually works, the more we see that those things are intermeshed with each other. You can't tear them apart, saying "Here's the good -- keep that, there's the bad -- throw that away!" It is a sort of package deal. You can't have one, without the other. To me that is a mildly helpful insight in the thinking about the problem of suffering.

Let me give you one more example. We were all very conscious when, three years ago, there was a terrible tsunami in South-East Asia, which killed hundreds and thousands of people. It was a terrible natural disaster. Tsunamis happen, of course, because there are earthquakes, and earthquakes happen because there are tectonic plates, and sometimes tectonic plates slip, and that is what generates an earthquake and produces the disastrous tidal wave of a tsunami. O.k. you might say, wouldn't it have been better for God to have created a world with a solid crust, in which there were no tectonic plates. The answer is no it wouldn't, because not only do tectonic plates slip, but also in the space between the plates mineral resources well up from the interior of the earth and replenish the surface resources of the earth, and that is absolutely essential in the ongoing history of life. If that wasn't able to happen, life would

very soon, in evolutionary terms, die out on the surface of the earth. So you see the world is intimately connected in ways that can't be torn apart in an unproblematic way. Perhaps that helps us a little bit.

But let's take another problem. Physical science tells us that the world is very regular and ordinary, and if the world is regular and ordinary how can it be that God can interact with it? Perhaps in some arbitrary, magic, poking in the divine finger way? Again, I think that would be a theologically unacceptable way to think of God's interaction with the world. But, if God doesn't interact in such an arbitrary way, how could God still interact in a world that seems too regular to admit participation by divine providence. That's been a genuine problem – indeed, until the beginning of the 20<sup>th</sup> century it would have been a much more intense problem than it is for us today. Certainly, after Newton, physics seemed to describe a world that is mechanical in its origin. Although Newton himself didn't think that way, he certainly thought for example that the spirit of God interacted with the world, but his followers, particularly in France where he had a great following, thought that the world was a world of mechanism.

### **3. The Replacement of a Mechanical World by an Intrinsically Unpredictable One.**

One of them went so far as to write a book called 'Man the Machine'. However, there's something fishy about that concept, because I think we know that we are certainly not merely automata. At first sight, science would seem to describe the world as a mere mechanism and that wasn't really changed by the 19<sup>th</sup> century discoveries of field theory. James Clerk Maxwell, the greatest of all the Scottish physicists, discovered electromagnetic theory, but Maxwell's field equations are as deterministic as Newton's equations of motion even though they are slightly more elaborate mathematically. So field theory didn't dissolve the mechanical aspect of the world.

However the 20<sup>th</sup> century did see the death of a merely mechanical view of the world, and that death came about by the unexpected discovery of intrinsic unpredictabilities present in nature. Of course the word intrinsic is absolutely essential there. We're not talking about unpredictabilities that could be disposed of by measuring more accurately or calculating more intently, but rather of intrinsic unpredictabilities that can never be disposed of. And as you all know they first came to light in the subatomic world of quantum theory. Quantum theory is intrinsically probabilistic physics. It can tell me that, if I have a radioactive nucleus, there is a 50/50 chance it will decay in, say, the next hour, but it cannot say that that particular nucleus will or will not decay in that period.

So there are intrinsic unpredictabilities in the subatomic world, but even more surprising it was discovered in about the middle of the 20<sup>th</sup> century that even the everyday, much larger-scale world, the world that seemed pretty well described by mechanics, is not as mechanical as it had once appeared to be. This has been highlighted by the celebrated discovery of the misnamed concept of chaos theory. The earth's weather system is extremely complex and in certain circumstances can be in a chaotic state. For example, the formation of clouds is so intrinsically sensitive that even the slightest disturbance can make their future behaviour totally different. This is described as the so-called butterfly effect, such that a butterfly stirring the air with its wings in the African jungle may possibly make a tiny disturbance that will grow and grow to produce eventually a huge storm over Scotland in three or four weeks time. Thus, long-term weather forecasting in detail will never be possible, since we shall never know about all those African butterflies.

So even the everyday world is intrinsically unpredictable, a very surprising discovery. And that's further complicated by the fact that such very sensitive chaotic systems depend on fine details of circumstance at such small scales that quantum effects come into play. However, putting quantum theory and chaos theory together to produce an even more unpredictable theory of quantum chaos is not possible in a straightforward consistent way, since these two theories are irreconcilable. Chaos theory is effective in

everyday phenomena, while quantum theory is effective in subatomic phenomena, but they involve different notions of physical causality.

Quantum theory is a theory which possesses a very small basic scale set by Planck's constant, so that there is a meaning to the words large or small. However, chaos theory is a fractal theory that has no scale, because its behaviour is the same on all scales. It is impossible to combine consistently a theory that has no scale with one that has a scale. Thus, another feature of the physical world is that our knowledge of what's going on is unavoidably patchy. So science tells us much about many aspects of the world, but it isn't as powerful or as all-embracing as we would like it to be.

#### **4. The Relation between What We Know and Reality**

Let us go back to intrinsic unpredictabilities -- what are we to make of them? That is an astonishing fact about the world, but what might it imply for us? Unpredictability is an epistemological property that philosophers are concerned about. Unpredictability tells us we cannot know how the system is going to behave in detail, in the future. A fundamental problem in philosophy is to figure out how epistemology, what we know, relates to ontology, what is actually the case. What is the connection between them? In other words, does our knowledge really tell us reliably about the actual nature of the world? Philosophers have given very varied answers to that question. Immanuel Kant, perhaps the most influential philosopher of the modern period, notoriously separated the two. He thought that we could know phenomena, the appearances of things, but we couldn't know the nature of things in themselves - they were lost in a sort of fog. If, however, you are a realist (like almost all scientists), then you believe that what you know is in fact a reliable guide to what is the case. And that's the mast to which I would nail my colours as a defensible philosophical position.

My wife once gave me a sweatshirt -- I still have it but I don't often wear it -- which has inscribed upon it those stirring but beautiful words 'epistemology models ontology'. You get some funny looks when you walk down the street with a tee shirt like that. A woman once stopped me and she said "what does that mean then?" And I said "It means that what we know is a reliable guide to the way things are" and she replied "that's obvious isn't it". But it isn't of course obvious to all of us. However, realists suppose that knowledge and reality are closely aligned, and most scientists are inclined to that belief. In fact, it is hard to see why we would do science if we didn't think it gave a realistic view of what was going on. It's hard work being a scientist with its own frustrations -- good ideas in the morning can prove perhaps less persuasive in the cold light of the afternoon -- but we do it because we feel that from time to time we learn something new about the way the world actually is. So we take a realistic point of view. And if you take a realistic point of view then you are going to think of intrinsic unpredictabilities not as unfortunate, necessary, patches of ignorance but as something much more significant -- as ontological opportunities, as evidence of some openness present in the structure of the world.

#### **5. Quantum Unpredictability**

Physics itself can't decide whether to treat unpredictabilities as ignorance or as openness and that's very clearly illustrated by quantum theory. Quantum theory is a probabilistic theory, but do the probabilities in quantum theory arise from ignorance about the fine detail of what's going on, or do they express an intrinsic indeterminism present in nature? In the traditional interpretation of quantum theory, stemming from Niels Bohr and his colleagues at Copenhagen, quantum unpredictability is a sign of intrinsic indeterminism and openness in the structure of the subatomic world.

It was a great surprise to people, in 1950, when David Bohm came along and produced an interpretation of quantum theory which gave exactly the same experimental results as the so-called Copenhagen interpretation. You couldn't tell between the two by an experiment in which everything was deterministic, since you couldn't have knowledge of all the factors that were at work. So for Bohm,

Heisenberg's uncertainty principle is simply a principle of necessary ignorance, but for Bohr it is a principle of openness in the world.

I follow the majority of physicists in going for the Bohr interpretation, but my reason for doing that doesn't lie in physics but rather in metaphysics, beyond physics itself. Both theories are extremely clever and interesting, though many of us think Bohm's too clever by half. It is ingenious but has a disturbing air of contrivancy about it and that makes us suspicious of it. We prefer what we think is a greater naturalism and lack of contrivance in conventional quantum theory

So we make our choice, when we see these intrinsic unpredictabilities in the world, I choose to interpret them, not only on the subatomic quantum level but also at the everyday level of chaos theory, as ontological opportunities that embrace an interpretation of the process of the world in a real sense that is open to its future. When I say being open to the future, of course I don't mean that the future is some kind of random lottery. I very much believe that there are causes that bring about the future. Science's account of causes and processes involves an exchange of energy between the constituents, but that is not a complete and all-sufficient description of the process of the world. We can interpret the world as being more open to its future than that -- in other words there are other principles that describe the process of world, not simply those described by reductionist physics.

That's an attractive interpretation not least because I think we have the experience of being able to act in the world as agents. I can *choose* to raise my arm. Now of course if I raise my arm, there are currents that flow into the nerves, muscles that contract, and so on -- but it seems to me that that is only part of the story, since I as a whole person decide. I execute my intentions to raise my arm. I think that is a fundamental human experience. The idea of human beings being automata (man the machine) is just inconsistent with human experience. Not only does it destroy human free will, but at the end of the day I think it destroys human rationality. If we were purely automata, there would be no rational discourse or exchange of understanding between us, just a series of happenings.

If science can be interpreted in such a way that it can begin to describe a world of which we could fittingly consider ourselves as being inhabitants, then that actually is a gain for science. I don't need quantum theory or chaos theory to be able to tell me that I have the ability to raise my arm. So I think that we can act in the world, and it would be rather surprising really if we could act in the world but the creator of that world could not act within the openness of creative processes.

I think it's incoherent to say that God acts in the world simply by poking an occasional divine finger. That would mean that the God who is the ordainer of nature, of the regularity of the world, is also the God who points the occasional providential finger. That doesn't make sense. If the world is open for the future, then God can act providentially to bring about the future. How should we think about that? Well obviously the problems of agency are too complicated for me to try and solve here standing on this platform.

## 6. Complexity Theory

But I think again there are some interesting clues, suggested lines of thought that are emerging from a new branch of science called complexity theory. The fundamental approach of physical science has been to study things by splitting them apart, into their bits and pieces rather than thinking about systems in their complex totality. But people are in a small way beginning to study the behaviour of mildly complex systems, treated not as bits and pieces, but as systems in their totality, treated holistically. As they study these systems they find, time and again, the same sort of phenomena, which reproduce themselves. Some of the systems that have been studied are purely logical systems implemented on a computer and some of them have been actual physical systems. I'll give you two quick examples.

First, a logical system was studied by Stuart Kauffman in a book called *At Home in the Universe*, which is well worth reading. He investigated a logical system called a Boolean net of connectivity two. To think about it pictorially, suppose you have a great array of electric light bulbs, each of which can be either on or off. Each bulb in the array is correlated with two other bulbs somewhere else in the array, and what they are doing now will determine what this one does next. The rules are quite simple and the system is started off with some sort of random pattern of illumination, some of them left on, some of them left off, and then you just let the system develop according to these rules.

I would have expected nothing very interesting to happen at all, just for them to flicker away haphazardly. But that isn't the case at all. It turns out that the system very soon spontaneously settles down and circulates through a limited cycle of patterns of illumination. If there are ten thousand light bulbs in the array there will be about only a hundred of these different patterns of illumination selected from  $10^{3000}$  possibilities. It is a most astonishing act of self-organisation. It happens time and again, so there must be some deep theory behind this self-organisation, but it is not at present known. I hope I might be round to see it when it is discovered and articulated in the course of the next few years.

Similar things happen in physical systems. For example, fluid contained between two horizontal plates that is heated from below can go convectively unstable. For some temperature differences the resulting flow is organised into hexagonal cells due to a spontaneous self-organising effect.

These patterns of behaviour are characterised not by energy but by what one might call information. I believe that a revolution is taking place in scientific thinking, which will eventually see information alongside energy as a fundamental category in scientific thinking. The duality of energy and information makes a faint but promising analogy with the much deeper duality of body and mind. Here lies a promising clue as to how we may begin to think more clearly about how we act in the world, using our bodies (energy) to execute our intentions (information).

### **7. God's Interaction with the World**

I think it's perfectly possible to believe that God also interacts with the open future of the world through the input of information into that unfolding future, shaping and guiding the processes of history -- not manipulating in some intermittent way but continuously guiding and leading them. This is hand-waving at present, but hopefully in the right direction.

The philosopher Thomas Nagal, talking about problems of human nature coins a very beautiful phrase, which I like very much, it says the best that can be said about our attempts to talk about agency today is that they are 'pre-Socratic flailings around'. The pre-socratic philosophers of 600 BC had a wonderful idea. They thought that the great variety observed in the world is nevertheless made of one kind of stuff. Some thought it was air, some thought it was water. Of course they didn't get it right, but they were waving their hands in the right direction.

When we think about agency and of divine providence, in this sort of way, we are at a similar stage. But I think we have to wave our hands, and I would suggest that the right direction is in terms of the input of information.

Now suppose God interacts providentially with the world through the input of information, which is possible because the world is full of intrinsic unpredictabilities -- it is in a sense intrinsically cloudy. Then there are a couple of consequences for theology. One is that, while there are lots of clouds in the world, there are also quite a lot of clocks. In fact science would not be possible if there wasn't such a wide variety of pretty regularly behaved systems. Of course theology has always acknowledged that, and it has

often appealed to the regularities in the world as signs of the faithfulness of the creator: seed-time and harvest has been seen as being a sign of God's faithfulness. That means of course that those clocks are going to continue ticking away, and I don't think God is going to poke his divine finger and change the setting of the clock just to please us.

What kinds of things then should we not pray for? There are regularities in the world that are not going to be set aside, so you shouldn't pray for such things to change, because God sets them up that way. Origen of Alexandria said that you shouldn't pray for the cool of the spring in the heat of the summer, tempting though that must have been in sweaty old Alexandria. Rabbis say that, if you are sitting in the synagogue and hear a fire engine go by, you are not to pray that the fire is not at your house, for two reasons: one is that you are thereby wishing ill on your neighbour, and the other is you should not pray that facts are not facts. That's a hard thing to say, particularly if you're sitting in a hospital waiting room, but I think there is truth in it.

If the world is built in that sort of way, and if the regularity of nature and the acts of human agents and of divine providence act together to bring about the future, and if they do so through the cloudiness and unpredictability of the processes, then it will not be possible to tear them apart. It's not possible to itemise what's happening in the world, to say God did this, nature did that, human will did the third thing. They are inextricably entangled with one another.

It may be possible to perceive God's providential action with the eyes of faith, but it will not be possible to demonstrate it in some unambiguous way -- the world is too involved and cloudy for that to be possible. Suppose you were an observer sitting on the banks of a marsh and you saw a fleeing band of escaped slaves come before you hotly pursued by soldiers and you saw that suddenly a wind came up and blew the water back from the marsh and enabled the slaves to get across, but just as the soldiers were about to enter the marsh to pursue them, the waters came back and caught the pursuing soldiers. Nothing would force you to say more than that it was a very fortunate coincidence, but equally nothing would deny the fleeing Israelites to say it was God's great act of deliverance of slavery from Egypt.

## **8. Conclusion**

So I think that God does indeed act in the world. Of course the problem of what God does and what creatures do is a very complex problem. It's really a theological problem, the problem of grace and free will, now written cosmically large into the history of the world. And it's been a long argument, with no simple answer to be found. But I believe that we can take absolutely seriously all that science really tells us about the process of the world and nevertheless not deny that God also acts in the context of history. We can also begin to understand why God doesn't do more. There is a necessary cross, the shadow side, of the greater good, of a vibrant creation in which creatures make themselves.

### **Questions (listen to the tape of the lecture for the answers)**

- (i) Could you say a little about the origin of your faith? (Gerry Priest)
- (ii) Would you consider evolution to be a God-guided process – if so, are creatures really making themselves and if not was it just lucky that a creature came to be made in the image of God? (Andrew Torrance)
- (iii) Could you elaborate on your conclusions concerning destiny beyond its eventual death, what you believe concerning the new creation and its relation to the present creation? (Rory Mcleod)
- (iv) You say God interacts in a tangible way with the universe, so what experiment would you propose to detect this and what would you consider a positive or negative result?
- (v) Can you talk more about creatures making themselves?
- (vi) Do you feel that the problem of evil and suffering is the deepest problem facing believers?

- (vii) Which God are you referring to here – a generic god or to a specific one – in which case, how do you know you've picked the right one?
- (viii) What are your thoughts on the multiverse as a substitute for God?
- (ix) How can we take science with the seriousness that you suggest and be confident that epistemology actually models ontology?
- (x) Concerning natural selection and cancer, natural selection is the creation of new phenotypes that are better suited to survive, so is cancer a necessary evil?
- (xi) Are you saying that in science you have to prove the multiverse, but in religion you just have to accept that God is there?
- (xii) How does your story fit in with biotechnology and the possibility of taking control over evolutionary development?