

Parallel Thinking Part 19: The Multiverse II

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Last week's article described how the laws of nature appear to have been very finely tuned to allow life to exist. If one of these factors would be altered, by even a minute amount, the conditions needed for life

would not be met and it is likely that the Universe would become sterile. This is known as the 'Goldilocks Paradox'.

This remarkable set of conditions needed to guarantee life could be thought of as follows: the probability of winning the UK national lottery is one in 13,983,816. Given the tiny odds, it's fair to say jackpot winners would feel very lucky. Yet in the grand scheme of things, with around 15 to 45 million tickets sold for every draw, some lucky person somewhere is likely to win.

Now imagine that one week, only one ticket, with one set of six numbers, was bought. The chances of there being a winner are exactly one in 13,983,816, which is highly improbable. Yet imagine the reaction when the lottery is run and precisely those six numbers – on the only ticket bought – come up. It would be incredible. One would probably conclude that there must have been an outside fixer selecting the numbers from the outset, in order to ensure the correct result.

The Goldilocks Paradox is a bit like that scenario. Our Universe could have had any combination of numbers. Yet those values – and only those values – can bring about life as we know it, and those are exactly the numbers that came up. It is as if the factors which allow life to exist in our Universe have been tweaked with perfect precision through Divine Providence.

Has modern science just uncovered God? Not so fast. Astronomer Royal Lord Martin Rees writes in *Just Six Numbers* (p. 166): "[Our] Big Bang may not have been the only one. Separate universes may have cooled down differently, ending up governed by different laws and defined by different numbers". While he admits that this theory – known as 'the Multiverse' – is "conjectural" and "extravagant", the idea that our Universe is merely one of many, where each has its own set of variables and laws of physics, has actually gained enormous scientific credence.

In our lottery example, the 'Multiverse' is equivalent to making sure that every single combination of six numbers – all 13,983,816 of them – are printed and sold as tickets. Now there is a 100% chance of someone winning. While the winner will feel special (and much richer), there is nothing particularly strange or special about it; it is merely good luck.

Yet not everyone is convinced. In a debate between evolutionary biologist Professor Richard Dawkins and geneticist Professor Francis Collins in *Time Magazine* (November 2006) Collins notes that: "you either have to say there are zillions of parallel universes out there that we can't observe at present, or you have to say there was a plan".

While the Goldilocks Paradox may not absolutely prove the existence of God, it certainly helps us to appreciate the providential nature of our very existence.

