

# Futures

## A strange game of dice

Quantum reality. By Chris Lee Jones

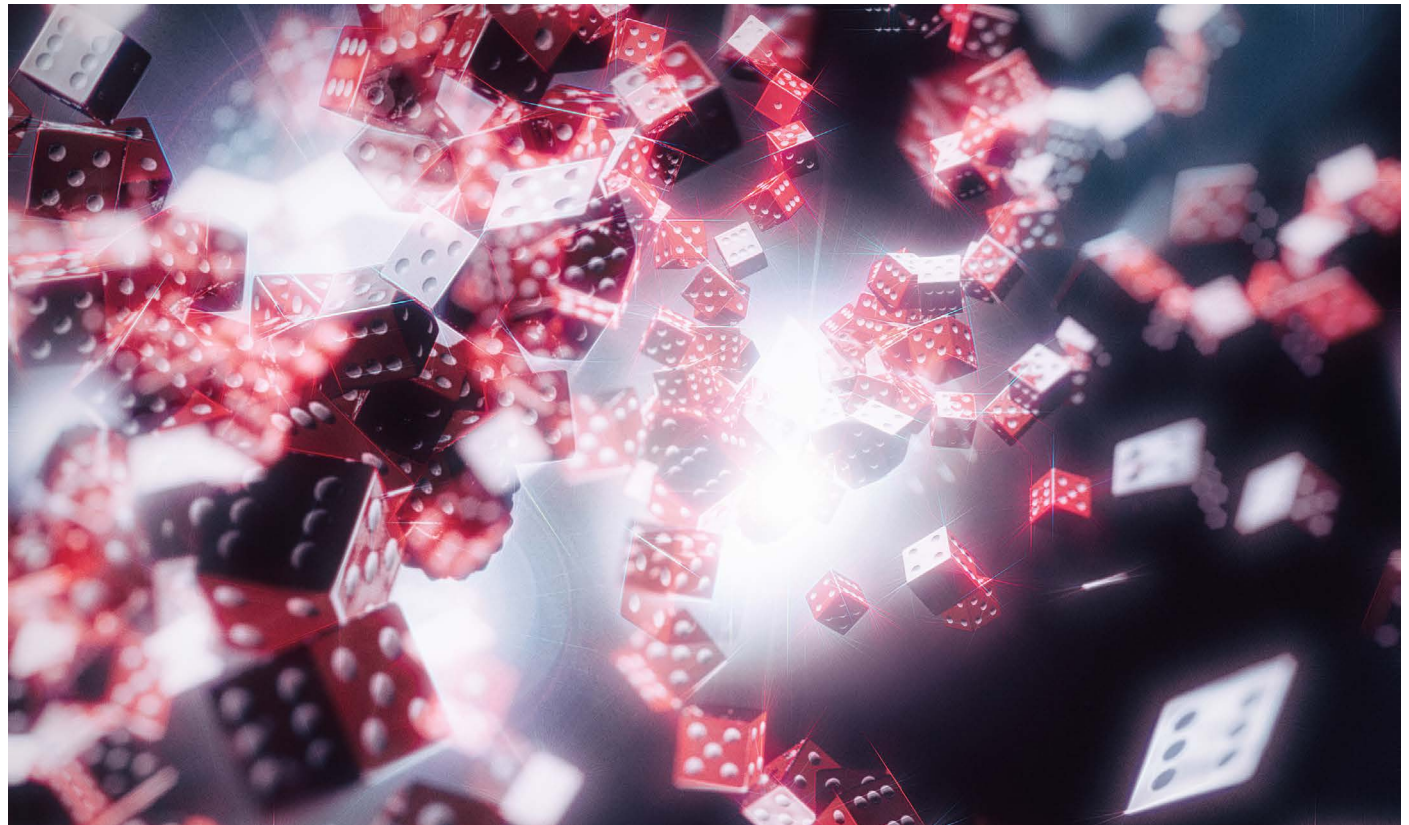


ILLUSTRATION BY JACEY

**T**he morning began with a breakfast of hörnchen and liverwurst, served by a girl wearing matching psi bracelets on each of her slender wrists.

The conference dining room was on the second floor, and if Nicolaus angled his chair correctly, he could just about see the towers of the Berliner Dom across a leaf-strewn park.

"I've been thinking about immortality," Nicolaus announced, and that much was true; he had woken up at 5 a.m. to a violent intrusion of metaphysical thoughts, possibly driven by anticipation of today's grand announcement.

Across the table, Niels Bohr looked apprehensive, his mood ripe for distraction.

"Let's assume that I'm right in thinking that ours is just one of many branches of the universal wavefunction," Nicolaus continued.

"Oh Nicolaus, not again," said Bohr, holding up his coffee cup, sniffing but not drinking. "You know that I cannot accept this

many-worlds nonsense."

"Bear with me, Niels. I have a proposal for your contemplation. What if, at the so-called moment of death, our consciousness simply shifts to a branch in which we do not die? In an uncountable infinity of branches, we simply live forever. Isn't that a wonderful thought?"

Bohr looked perturbed. "It's not a very original thought. The idea's been banging around since the 1980s. Quantum immortality: just more Everettian gibberish if you ask me."

"But it explains so much! Like the fact that you're hundreds of years old."

"You're hardly a spring chicken yourself, Nicolaus. But there is no mystery; my advanced age is simply a consequence of a cumulation of breakthroughs in modern medicine. Occam's razor, Nicolaus. You might want to look it up."

The waitress returned with more coffee. As she leant across the table, Bohr pointed to the jewellery on her wrists. "These are interesting ornaments," he said. "I'm guessing you're here

for more than just the work?"

The girl beamed, as if she'd been hoping he would ask. "I'm a postgraduate student at Potsdam. Working on the implementation of  $n$ -qubit W states in faster processors. You know, next-generation QUBE stuff. It is an honour to meet you, sir. Might I ask a question?"

"Of course."

"What do you think the Delft team are going to announce today? It is such a closely guarded secret."

Bohr smiled, and looked across to Nicolaus. "My friend here is hoping for a vindication of the many-worlds hypothesis. I, on the other hand, would put my money on a good old-fashioned, non-deterministic collapse of the wavefunction. But the truth is, neither of us know. Like yourself, we have been kept outside the loop."

The waitress began to collect various plates and cups from the table. "You've been right before on the big questions," she reminded

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Bohr wryly. “Your arguments with Einstein on local realism, for example ...”

“They were *discussions*, my dear, not arguments! But yes, I still derive a certain satisfaction that I turned out to be correct.”

“Well, my money – not that I have much money – is with the Copenhagen interpretation,” the girl said, before breezing off to another table.

Nicolaus smiled. “For the sake of my immortality,” he said, “I hope that you’re both wrong.”

The keynote lecture was one of the most anticipated in the history of science. Nicolaus could think of only two occasions – the discovery of the Higgs boson and the revelation of dark-force carriers – that came anywhere near as close. The Delft consortium was set to announce the result of measurements that would at last reveal the correct interpretation of quantum mechanics. Secrecy had been achieved in the most modern of fashions, by swamping QUBE-net with misinformation, each member of the 200-strong consortium ‘leaking’ a different result – half coming out in favour of Copenhagen, half in favour of many-worlds. The invited-only audience in

the lecture hall would be the first to hear the actual results.

The head of the consortium stepped forwards to begin her talk. She began by detailing some of the technical challenges surrounding the acquisition of loophole-free data. Then, with surprisingly little fanfare, she announced the team’s findings.

It was not an exaggeration to say that the results were jaw-dropping.

The atmosphere in the conference dining room after the talk was a mixture of excitement and bewilderment. Nicolaus stood next to his old friend Bohr in the lunch queue, but both seemed to be reluctant to put their thoughts into words.

The waitress with the psi-bracelets saw them from across the room and rushed up like an excited schoolgirl. “What happened?” she asked breathlessly. “Which one of you was right?”

Clearly, the official announcement had yet to find its way onto QUBE-net.

“The scientific method,” Bohr said, “has turned on itself.”

The girl frowned.

“What my esteemed colleague is trying to say,” Nicolaus added, “is that both of us were right, and both of us wrong. It turns out that the Delft team got a different result every time they ran the experiment. Sometimes, the collapse of the wavefunction was real; other times it was apparent.”

The girl rubbed her hands together, causing the metal psis on her wrist to chime gently. “You mean, we don’t just have a superposition of states, but now we have a superposition of *interpretations*?”

Bohr let out a hearty laugh. “I couldn’t have put it better myself.”

“So,” Nicolaus concluded, “it seems that even *mortality* is a lottery. God does indeed play a strange game of dice.”

Niels Bohr shook his head, sighed, and reached for a large Kartoffel salad.

**Chris Lee Jones** is a Welshman who has lived the past 20 years as an exile in rural England. His short fiction has appeared or is forthcoming in *James Gunn’s Ad Astra*, *Andromeda Spaceways Magazine*, *Liquid Imagination* and other venues. [leejonesbooks.weebly.com](http://leejonesbooks.weebly.com)

## THE STORY BEHIND THE STORY

**Chris Lee Jones reveals the inspiration behind *A strange game of dice*.**

This short tale began as part of a conversation between two characters in a longer story. As I wrote the dialogue, it began to take on a life of its own and soon became too esoteric for the original story. I shelved the piece as an isolated curio, unsure quite what to do with it.

A few months later, I watched a TV documentary about the increasingly sophisticated experimental tests of Bell’s inequality and the death of local realism.

This brought to mind the Bohr–Einstein debate and the ongoing discussions around the philosophical meaning of quantum mechanics. The Everett interpretation has always resonated with me, and I began to wonder whether it will one day be possible to test it experimentally.

I returned to my discarded off-cut, replaced one of the characters with Niels Bohr (we can all be forgiven a bit of hero worship), and tried to work it into a single, coherent tale. I aimed for flash-fiction length and resisted the temptation to dilute the physics.

Being a realist (in the non-quantum sense) I knew that the story that emerged would likely be a hard sell to most SF magazines. Perhaps, in an infinitely branching universe, its publication was inevitable. Or maybe, there is only one branch and I should count myself lucky. Either way, I am pleased that my story found a natural home in the wonderful journal you are reading now!

