

# Futures

## The Oh My God particle

A brief history of time. By Ian Stewart

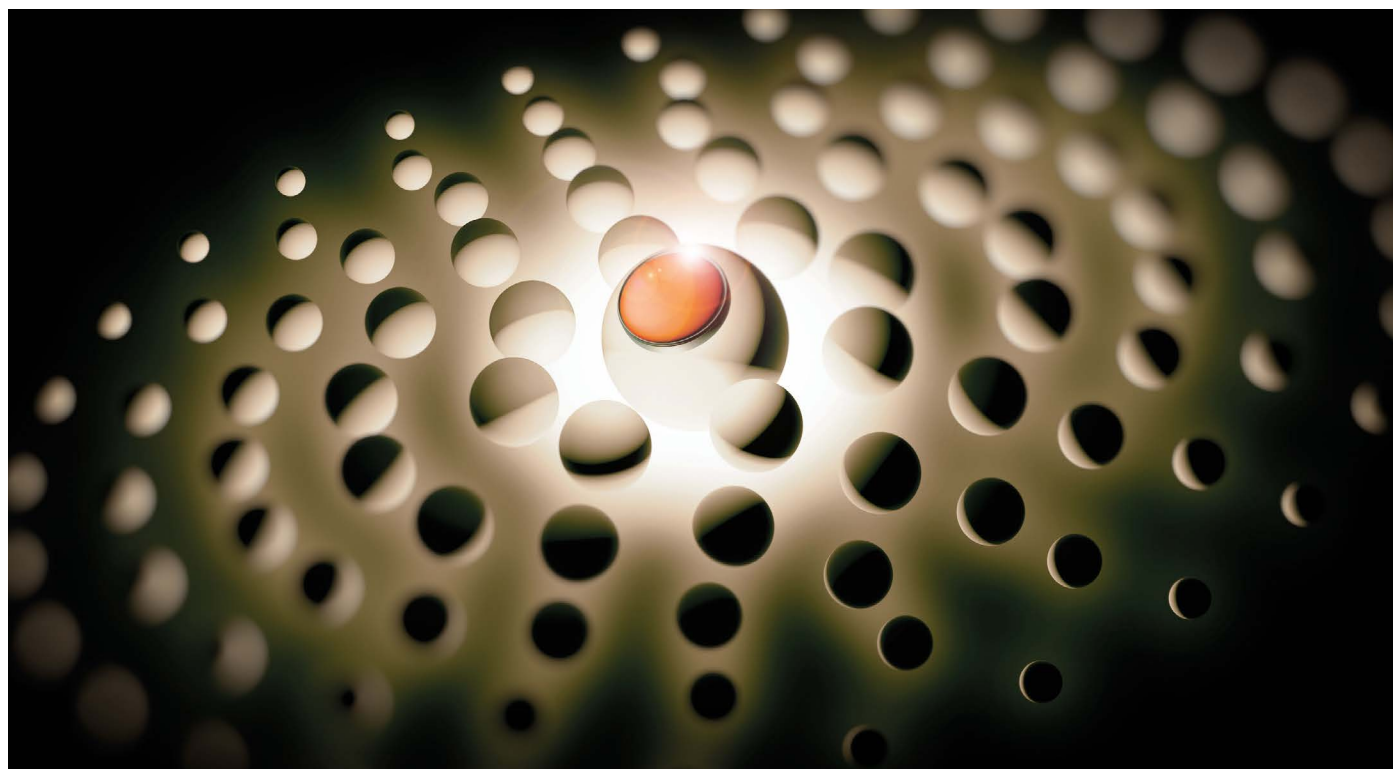


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**T**he Time Traveller (for so it will be convenient to speak of him) was expounding a recondite matter.

“I shall have to controvert one or two ideas that are almost universally accepted. We have all been taught that there is no difference between time and any of the three dimensions of space —”

“There is a difference, though,” mused the Provincial Mayor. “You can move along all directions of space, but not along the dimension of time.”

“Which proves my point.”

“What point?” said Filby, a very bright, argumentative redhead.

“That time is not a dimension.”

“What is it, then?”

“A particle.”

When the uproar had died down, the Time Traveller resumed his discourse. “I call it a chronon. Time does not exist. Instead, we interact with the ambient chronon field, and when we absorb a chronon —”

“An instant of time passes!”

“Seems to pass.”

“So the apparent passage of time is the *quale* of chronon absorption?” asked the Psychologist.

“Indeed. Chronons attract each other, like gravity. They might even *be* gravity. The expansion of the Universe is not the result of some silly Cosmic Egg exploding at the moment of the creation, like that priest Lemaître proposes: instead, chronon depletion steadily reduces the attractive force. I call it *inflation*.”

“Can chronons explain why we grow old and die?” asked the Medical Man.

“Cellular damage caused by chronons interacting with ordinary matter.”

“What about the speed of light as a limiting velocity?” asked the very young man.

“*That?* A triviality. Let me ask you a question first. What is the speed of light?”

“299,792 kilometres per second,” the very young man said smugly.

“Exactly wrong,” said the Time Traveller. “It is 0.00000333 *seconds per kilometre*. Light does not move a certain distance in a specified time.

It absorbs chronons while traversing a spatial dimension.”

“But time also passes if we stay still,” the Provincial Mayor objected.

“That is the CMB.”

“Pardon?”

“Chronic Mean Background.”

“You still have not explained the cosmic speed limit,” the very young man protested.

“The faster something moves, the more chronons it absorbs. Because its chronic capacity is limited, the flux levels off.”

“Chronic indigestion,” said the Medical Man, grinning.

“What is it good for?” Filby butted in.

The Time Traveller stroked his beard. “I wondered about that, too. Until I invented the Chronon Emitter.”

Filby stared at him. “Let me guess. Absorbing chronons gives the illusion of travelling into the future, so emitting them is like travelling into the past. You claim to have invented a time machine.”

“No, I have made one.” The Time Traveller

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opened a door. “My workshop.”

A strange machine sat in the middle of the room. There was ivory in it, and some transparent crystalline substance.

“Here is one I made later,” said the Time Traveller. “Because of this conversation, I will have sent it back from next week.”

“We have only your word for that,” said Filby. “Can it go into the future?”

“Only by waiting, as we do. But it could transport a volunteer to the past, to observe and leave records for the future. And people could send messages to their ancestors.”

“Next week’s stock market prices!” the Provincial Mayor cried.

“Ah. It is not that simple. That would tell you about the future that the message came from. But it might not be *your* future.”

“Alternative universes, right?” said the very young man.

“Wrong. There is only one universe. But it is ... *mutable*.”

“It sounds extremely dangerous,” said Filby. “Your machine could change history! We might all never have existed!”

As everyone else laughed, the very young man peered into the machine. “This row of dials must set the time interval. How far into the past can it go?”

“To the very beginning of time – if such there was.”

“The big red button no doubt activates the machine,” Filby mused aloud. “Can you change the settings while in transit?”

“No, they are locked in for safety. To reset, you have to wait until you arrive.”

Filby pursed her lips. “A very clever hoax.”

“No, it is perfectly genuine.”

“Then prove it. Go back two minutes.”

“But would he not –” the Medical Man began.

“Yes. But in the mutated universe, we have already experienced his arrival. Conclusive proof!”

“Very well.” The Time Traveller climbed into the Chronon Emitter, fastened his seat belt, and turned the rightmost dial to ‘2’. “I will count down. Five, four, three –”

Filby reached across, spun the leftmost dial to its maximum setting, and pushed the red button. For an instant, a ghostly, indistinct figure sat in a whirling mass of ivory and brass. Then this phantasm vanished.

“You *murdered* him!” the Medical Man cried, aghast.

“That thing is far too dangerous to be unleashed upon the world,” Filby said flatly. “Anyway, he is still alive. In some sense.”

“Not in any medical sense. I shall inform the police –”

“Officer, I have just seen someone abducted in a time machine. I am sure they will believe that. *It was necessary*.”

“I wonder ...” mused the Provincial Mayor. “Will – er, *did* he fall among the hairy savages of the Age of Unpolished Stone? Or wander upon some plesiosaurus-haunted oolitic coral reef?”

“I fear not,” said the very young man. He stared at Filby. “You sent him back to the beginning of time, did you not?”

“Yes,” said Filby. “To ensure he would never arrive, and so could cause no harm.”

“Are you sure? He claimed that the Universe has been constantly absorbing chronons and expanding. Reverse that, and it gobbles up time and shrinks down to nothing ... I think the Time Traveller was wrong to dismiss the Cosmic Egg. And I think I know what – and who – triggered it.”

“Oh my God,” said the Medical Man.

Filby shrugged. “I have been called worse.”

**Ian Stewart**’s latest SF novel is *Rock Star*. He is sole winner of the Bloody Stupid Johnson award for Innovative Uses of Mathematics, and an honorary wizard of Unseen University.