

# Science as illusion

When a magician uses science to present his tricks, the effects are seductive.

Alison Abbott takes a masterclass in sorcery.

It seemed rude to leave the lecture hall when the president of the Max Planck Society had generously given the floor to a representative of the “young generation of researchers” in whose hands lie the “future of science”. Still, when Thomas Fraps thanked the society for the opportunity to speak for “55 minutes on some of the many promising themes in science and medicine”, some at the back did quietly slip away.

The remaining audience grew visibly impatient as Fraps warmed to his theme. “My generation is aware of its growing responsibility to bring to the public an informed transfer of new scientific knowledge from the interdisciplinary dialogue within our universities...” They had already sat through a long evening of televised discussion on bioethics, and there was something annoyingly smug, even odd, about this guy. And was his tie really getting longer?

Fraps stepped away from the podium and began self-importantly to clean his glasses with a silk handkerchief from his pocket. Then he pulled the cloth straight through the lenses, flicked the silk to one side and revealed, in his previously empty hand, a glass of orange juice. “Cheers!” he said, taking a sip.

As the audience grasped that Fraps was a magician, astonished laughter erupted. The fact that he used expert scientific patter to accompany his traditional magic tricks added to the delight. A classical rope trick was a demonstration of molecular biology in action, the 2-metre rope representing a strand of DNA. In Fraps’ hands, the two ends mysteriously became four, “to better illustrate the four building blocks of life”, and the rope became a joined circle to illustrate cell division. He used (invisible) ‘genetic scissors’ to snip out a mutated gene. And picking up the small pieces of rope that fell at his feet he recreated the single unbroken length.

The climax of the performance came when Fraps pressed a member of the audience to invest in his research project on transgenic lemons. The ‘volunteer’ handed over a €10 note, after signing it. By sleight of



Casting a spell: Thomas Fraps hovers between the worlds of quantum physics and magic.

hand Fraps turned the note into a worthless receipt. “Well,” he smiled, “if you want good research, you need higher investment.” But he later retrieved it from the dripping centre of a fresh, purportedly transgenic, lemon, cut open on stage. “My research project seems to have been worthwhile after all,” he shouted over resounding cheers.

Fraps earns his living by pretending to be an expert for a range of unsuspecting audiences, not only scientists. Mostly he entertains executives at corporate events for the car or computer industries, where his patter is linked to their professional interests. But his speciality is science-based stage shows, like his current two-hour *Metamagicum* show, centred on quantum physics.

## Magic touch

If it hadn’t been for his obsession with magic — he joined the Magic Circle in his native Munich when only 17 — Fraps might have been a conventional physicist. Occasional magic performances helped him pay his way through university, but he didn’t think of turning professional. A short undergraduate stint at CERN, the European particle-physics laboratory near Geneva, taught him that the abstraction of quantum physics was not for him, and he began to think about a career in medical physics. Fatefully, he took a year out before his final exams to do magic — to get rid of the itch once and for all. But the ‘cure’ failed.

Fraps believes that a scientific background can be advantageous for a magician. There are said to be only six conjuring effects,

but hundreds of different ways of achieving them. Magicians mostly make tricks work by directing the audience’s attention away from the object being manipulated. “This is why magic effects can’t be separated from their presentation,” says Fraps.

That presentation must provide engaging storylines with enough logic to make the tricks plausible. “The audience has to believe a trick, so you have to construct a reality where they are going to see cause and effect.” Scientific material makes that easier, he says.

So his earlier struggles with quantum physics have now borne fruit, if not in the context his professors might have expected. “In *Metamagicum*, I transpose a sock sealed in a milk bottle into a parallel universe by using a special machine — the Parallel-O-Meter. In my presentation, this does have internal logic, crazy or not,” he says. Science is weird enough to allow for theoretical parallel universes, he explains, and he simply invents a gadget to do the job.

Fraps sees similarities between Einstein’s ideas of relativity and magic tricks. “The concept of mass or gravity influencing time blew my mind when I was a student,” he says. “Magic blows people’s minds in just the same way, because they see something that contradicts everyday experience.”

Einstein famously said that “the most beautiful thing we can experience is the mysterious — it is the source of all true art and science”. Fraps feels vindicated by this. “My choice to use scientific themes for magic presentation is an artistic one,” he says. ■

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