



## 60-Second Adventures in Thought

### *The Twin Paradox*

Albert Einstein didn't have a twin brother – but he had some funny ideas of what you could do with one.

He imagined two identical twins – let's call them Al and Bert.

Now, Al is a couch potato, but Bert likes to travel, so he hops into a spaceship and zooms off at close to the speed of light.

That's when Einstein's special theory of relativity kicks in. It says that the faster you travel through space, the slower you move through time. So from Al's point of view Bert's time would be moving slower than his own. To put it another way, time might fly when you're having fun – but when clocks fly, they run more slowly in relativity.

After a while Bert decides to head back, still at close to the speed of light, and returns to his brother with his holiday snaps. But when Bert arrives home, Al will now be older than his twin. Which makes their double dates a lot more awkward.

Although it seems implausible, Einstein just followed his theory to its logical conclusion and it turns out he was right.

This concept of 'time dilation' provides the basis for our Global Positioning System – which is how your Sat Nav knows you need to 'turn left in two hundred yards.'