



Did you know that on the night of Princess Diana's fatal car crash, every CCTV camera along the route her car took was pointed away from the road as she passed? From the Ritz Hotel to the Pont d'Alma tunnel, a total of 17 CCTV cameras failed to spot the Princess on her fateful journey. Conspiracy theorists argue that this proves there was something suspicious about the circumstances of Diana's death – why else would every one of those cameras be facing away from the road as she passed? "Who moved those cameras", they ask, "and why?"

There is, however, an important detail: those 17 CCTV cameras were privately owned, and used as burglary deterrents by the businesses who owned them. Why were those CCTV cameras pointed away from the road as Diana passed? Because they were pointed at the shop doorways they were bought to protect.

Details like these – which seem very convincing on the surface but which dissolve when examined – are surprisingly common, not just in unusual conspiracy theories but in everyday conversations too. They often arise when someone is looking for facts to prove a point they already believe, rather than looking to understand as best as possible whether their beliefs are accurate.

When it comes to questioning our beliefs, our desire for a particular idea to be true can entirely override our judgement. Take, for instance, a typical story someone might offer as proof that ghosts are real, and that the spirits of our deceased loved ones can interact with our lives:

"When I was thinking about throwing away an ornament my mother used to love, her photograph fell off the mantelpiece. I knew right away it was my mother telling me I wasn't allowed to throw the ornament away."

Some may suggest that this was nothing more than a coincidence, and that a draught knocked over the photo – an explanation the believer is unlikely to accept, because it feels too coincidental that the photo fell over at the exact time they were considering whether to throw away the beloved trinket.

But consider what must be involved in the ghost hypothesis, and the probability of each step: we must accept that there is something about the body that survives death; that there is an afterlife this spirit inhabits; that the spirit retains memories of its old life; that the spirit has a way of getting back to the 'real' world; that the spirit has a way of moving physical objects; and that the spirit cared enough about the cherished ornament to send a signal of her disapproval.

When listed out in this manner, the ghost hypothesis seems far less likely than the draught hypothesis – after all, we know draughts exist, but we have no good evidence that ghosts do. Yet the notion that this fallen picture is proof of an afterlife is a far more seductive idea, because it feels more meaningful. The sense that things must happen for a reason, and that events have agency, is something that's hard-wired into our thinking, and so often colours the way we interpret randomness and chance events.

This hard-wiring isn't always harmless. When people are suffering from a serious illness, for instance, they are often given no end of well-meaning advice from people recommending they try one

alternative treatment or another, backed up by stories of people they've known who have had similar illnesses and are cured after using this or that alternative treatment.

To the patient, knowing that someone they may know has tried something, with apparent success, can feel very persuasive. However, important questions must be asked, before it is worth accepting the alternative treatment is worth trying. For instance: how likely is it that the person recovered due to something else they were doing? Or that they were one of the small number of very lucky people whose condition spontaneously improves? And how many people might there be who have tried the treatment and found it unsuccessful, but they are less willing – or able – to tell everyone about their experience?

This is why it is so crucial that before patients gamble on a particular treatment, it has been studied using the fairest tests possible, to understand whether it is genuinely useful, or whether its illusion of success can be attributed to other factors.

Ultimately, the human brain is capable of some remarkable achievements; it is also capable of a quite remarkable level of self deception. By questioning even the facts we want to be true, by striving to look for the bigger picture, and by making use of methods like tests and trials to remove as much of our bias and motivated reasoning as we can, we can find out what's really going on.

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