

The stupidity trap

A high IQ and expert knowledge can't always protect you from flawed thinking, reports David Robson

PAUL FRAMPTON was looking for love. A 68-year-old divorcee, he was delighted to strike up a friendship on an online dating site with someone claiming to be the Czech glamour model Denise Milani. They soon arranged to meet during one of her modelling assignments in South America.

When he arrived in La Paz, Bolivia, however, he was disappointed to find that Milani had been asked to fly to another shoot. But could he pick up the suitcase she had left? He did, and was subsequently arrested and charged with smuggling 2 kilograms of cocaine.

It may seem like an obvious honey trap, yet Frampton wasn't exactly lacking in brainpower. An acclaimed physicist, he had written papers on string theory and quantum field theory. How could someone so clever have been so stupid?

Recent psychological research shows that Frampton's behaviour isn't as exceptional as it first appears. IQ does correlate with many important outcomes in life, including academic success and job performance in many workplaces. But it is less useful at predicting "wise" decision-making and critical thinking, including the capacity to assess risk and uncertainty and weigh up conflicting evidence.

Indeed, as I discuss in my new book *The Intelligence Trap*, intelligence and expertise can sometimes make you more likely to err. This has important consequences, leading not only to errors like Frampton's, but also to the political polarisation we see on burning

issues such as Brexit or climate change.

Here are some of the big intellectual traps that lead smart people to act stupidly. Luckily there are science-backed ways to avoid them (see "Keeping your thinking on track", p 32).

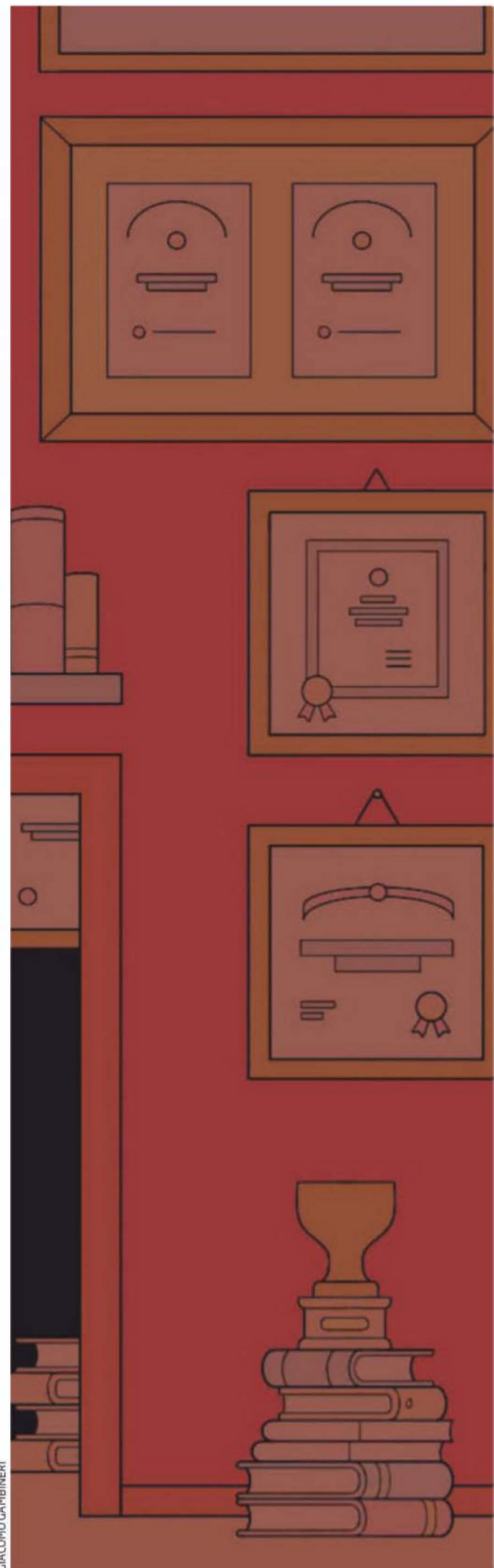
Dysrationalia

First, a personal question: do you think you are less likely to make a biased decision than the average person?

Since pioneering work in the 1970s by Nobel prizewinning psychologist Daniel Kahneman and his colleague Amos Tversky, it has been apparent that the human mind is prone to numerous biases.

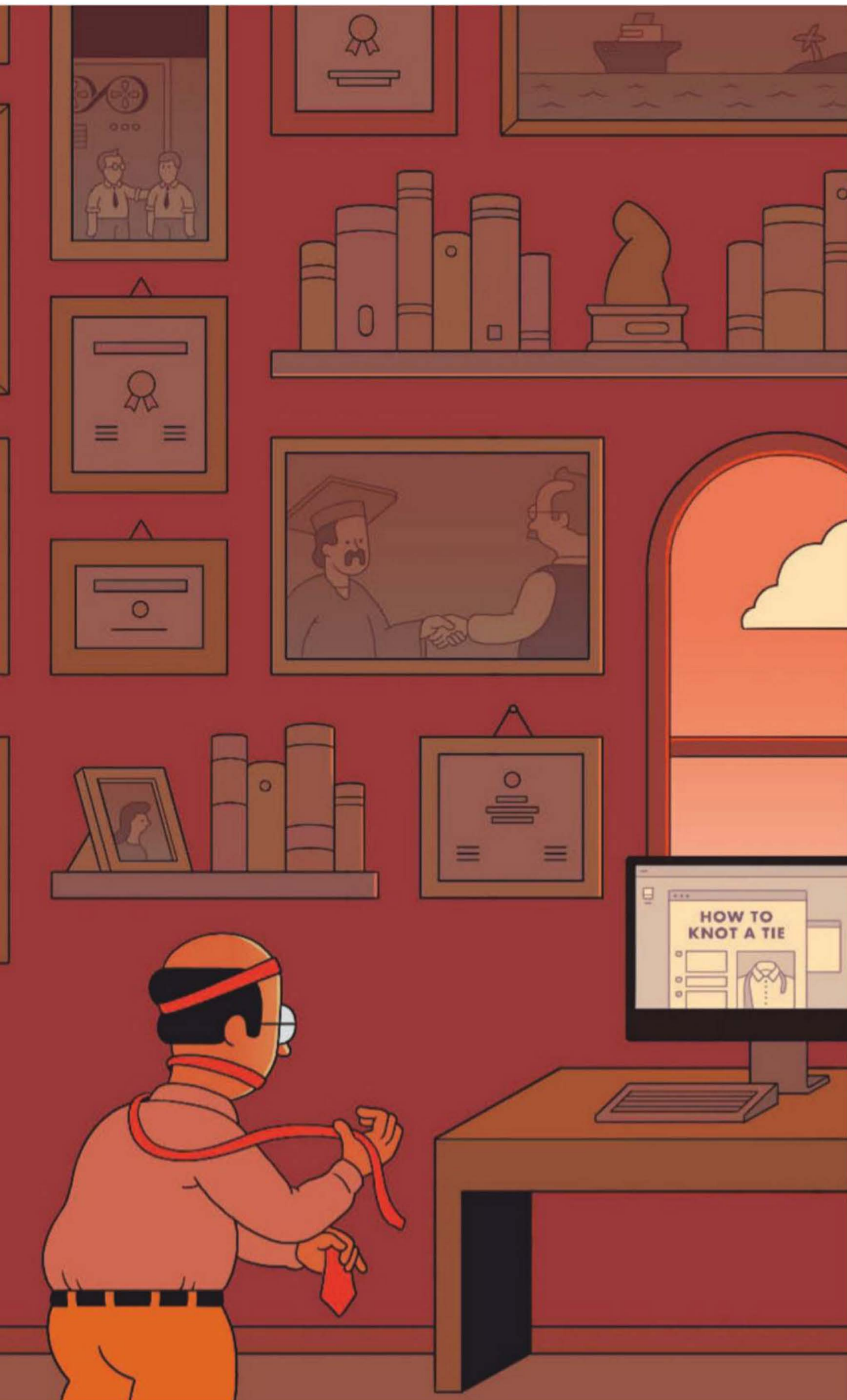
There is framing – our tendency to view certain statistics more favourably depending on the way they are phrased. This is why adverts say that food is "95 per cent fat free" rather than "5 per cent fat", even though they mean the same thing. There is the sunk cost fallacy: the tendency to pour more resources into a failing project to save sacrificing your initial investment, even though it will ultimately cost you a lot more than simply giving up. And the gambler's fallacy, the belief that chance events somehow even themselves out; if the roulette wheel lands on a red, then you may think it is more likely that it will land on black next time.

Crucially, some people seem to be consistently more susceptible to these biases than others. Wändi Bruine de Bruin at the University of Leeds, UK, has created the adult



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decision-making competence scale. Your score on this proves to be much better than IQ at predicting the risk of real-life mishaps, from missing a flight to catching a sexually transmitted disease or going bankrupt. In other words, many smart people have bad decision-making skills. What leads to this incongruity?

One explanation is that people who make poor decisions rely too heavily on intuitive rather than deliberative thinking. They may have the capacity for abstract reasoning, but they aren't engaging it to think through life's problems. They may also lack the skills to regulate their emotion and allow them to dissect and account for their feelings.

“With practice you can learn to identify your own biases and logical fallacies”

To escape the sunk-cost bias, for instance, you need to overcome your regret at the loss of your earlier investment.

Keith Stanovich, a cognitive scientist at the University of Toronto, Canada, has described this mismatch between intelligence and rationality as dysrationalia. He has also shown that smarter students – as measured by exam scores – tend to have a larger bias blind spot: they underestimate their own capacity for bias compared with others.

If you answered “yes” to the opening question – and think you are less prone to bias than average – you probably suffer from this flaw. That may, ultimately, lead you into a snare similar to the one that caught Frampton.

Solomon's paradox

The fabled King Solomon, who ruled Israel some 3000 years ago, was renowned across the Middle East for his wise judgement of others' dilemmas. Yet biblical stories say he was less astute in his own affairs: he kept hundreds of pagan wives and concubines, against the instructions of his religion, and he failed to educate his only son, who grew up to be an incompetent tyrant and ultimately contributed to the kingdom's downfall. This is Solomon's paradox and it is another reason why otherwise smart people may act stupidly.

The term was coined by Igor Grossmann, a psychologist at the University of Waterloo, Canada, who has pioneered the study of

KEEPING YOUR THINKING ON TRACK

Think of intelligence as being like a car's engine. Greater power can get you to your destination more quickly, but only if the steering, the speedometer and the GPS are all working too. Otherwise, you may find yourself driving around in circles, or off a cliff.

Fortunately, there is plenty of research out there to help keep us on the right track so we avoid wrong turns into "intelligence traps" and the poor decisions that result (see main article).

Our thoughts tend to lead us astray when our emotions drive a biased, one-sided view of a problem, so many strategies aim to encourage a more dispassionate attitude.

Igor Grossmann of the University of Waterloo in Canada, for instance, has found a simple way to resolve Solomon's paradox (the tendency to reason more wisely about other people's dilemmas than our own). When thinking about personal and political problems, imagine that you are discussing someone else's life rather than your own. This "self-distancing" restores a less-biased, more open-minded attitude. Reflective practices such as mindfulness also seem to encourage a wiser, more rational stance, reducing errors such as the sunk cost fallacy.

And there is good evidence that with practice, you can learn to identify your own biases and logical fallacies so you can spot the potential for dysrationalia before you go wrong. One of the most robust tricks is to pause to consider the opposite of what you had just been thinking, actively challenging your assumptions and intuitions and looking for alternative hypotheses.

You can do this yourself, but to make sure we are all thinking clearly, schools and universities could teach these thinking habits to students, and businesses could encourage such behaviours in their employees.

Education has made incredible strides in improving the kind of abstract thinking and reasoning that is normally considered intelligent, but people gifted with incredible minds need to know how to use those talents responsibly, and how to make the most out of what they have got.

evidence-based wisdom. His decision-making tests have involved presenting people with various dilemmas, both political and personal. He then scores responses according to various criteria, such as willingness to explore other conflicting points of view and capacity to recognise the inherent uncertainty in a situation – rather than thinking in dogmatic, absolute terms. He also measured their intellectual humility: whether they admitted their ignorance and showed a desire to find out more information.

He has found that, as with dysrationalia, overall scores are only loosely linked to conventional measures of intelligence, and the wise-reasoning scores tend to be better at predicting overall health and well-being than IQ. Intriguingly, parallel research suggests that repeatedly questioning your own judgement can make you better at predicting the outcome of elections, referendums or military coups.

Grossmann has also shown that even the wisest person's scores can dip in certain circumstances. Like King Solomon, we tend to find it easier to reason wisely about other people's dilemmas than our own – meaning that our thinking is often the worst when it may matter to us most.

Motivated reasoning

Numeracy and conceptual understanding can even backfire when we use them on the complex scientific issues they should help with most.

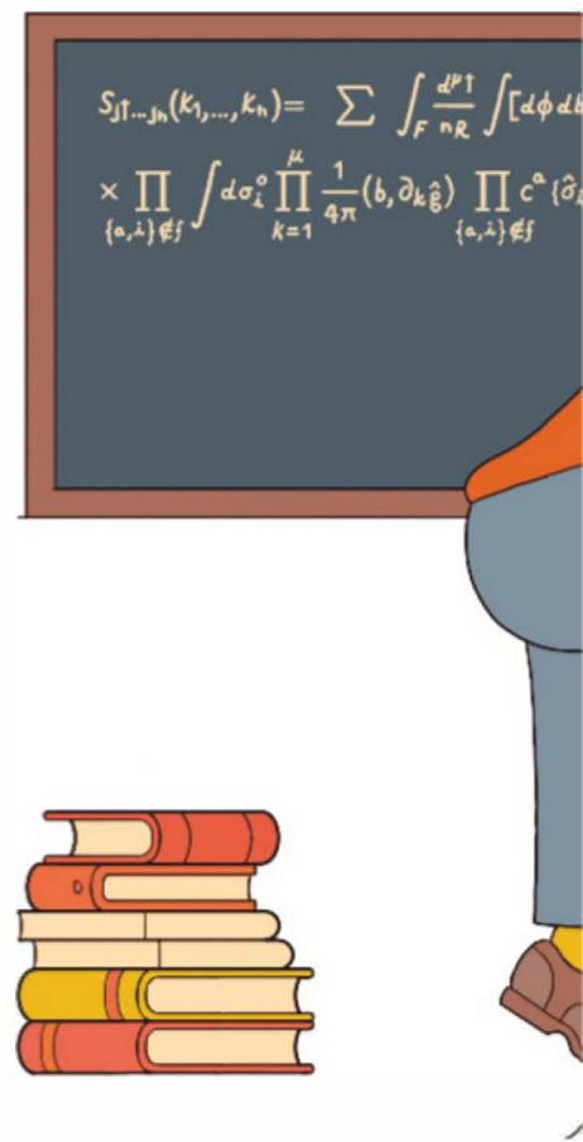
Consider that 97 per cent of scientists actively studying climate change agree that our carbon emissions are causing a global rise in temperatures. You would have to be pretty ignorant to disagree with them, right?

Wrong!

Dan Kahan at Yale University has designed a test of scientific general knowledge and numeracy that gives a rating for what he calls ordinary science intelligence. He has used the results of this to examine how science intelligence influences Democrat and Republican views of climate issues (see graph).

For the Democrats he tested, the pattern was as you might expect: the greater their scientific literacy, the more likely they were to endorse a statement about human-made global warming. But this wasn't true for the Republicans: those with higher science intelligence were slightly more likely to be climate change deniers.

Psychologists call this phenomenon motivated reasoning, which means we apply our intelligence in a one-sided manner, to



build arguments that justify and rationalise our own intuitive views and demolish the arguments of others. And the smarter and more knowledgeable you are, the more convincing those arguments can seem.

Motivated reasoning is a particular problem for charged issues like climate change, because questioning our beliefs on such subjects may erode our whole political identity. It was also evident in a study of Republicans' attitudes to the US Democrat healthcare reforms known as Obamacare: more knowledgeable participants were more likely to believe the fallacious claims that "death panels" would decide who was worthy of treatment – even after they had been offered information debunking the idea.

Motivated reasoning isn't restricted to politics. Scientists are less critical of research that offers neat, newsworthy conclusions, for instance, and this seems particularly prevalent among those studying the paranormal. Interestingly, certain paranormal beliefs – such as beliefs in extrasensory perception – do seem to be slightly more common among more educated participants.

Earned dogmatism

Smart people can have a tendency to overestimate the extent of their expertise.

This would seem to run counter to a now famous study by David Dunning at the University of Michigan and Justin Kruger at



a biologist, to describe the Krebs cycle.

Fisher then sprung a surprise test: the participants had to write a detailed description of the principles they claimed to know. Despite their claimed knowledge, many stumbled and struggled to write a coherent explanation. However, when graduates considered topics beyond their specialism, or more general, everyday subjects, their estimates of their knowledge tended to be more realistic.

Fisher suspects that the graduates simply hadn't recognised how much they had forgotten from their peak knowledge, a phenomenon he calls meta-forgetfulness. "The most cynical reading of it is that we're not giving students knowledge that stays with them," says Fisher. "We're just giving them the sense they know things, when they actually don't. And that seems to be counter-productive."

This is worrying, because further research has shown that perceptions of expertise can lead to earned dogmatism – the sense that you have earned the right to remain closed-minded about a subject, while rejecting arguments that disagree with those views. A politician, say, may have outdated theories based on their degree in economics, but thanks to their earned dogmatism, they may ignore new information. If that is combined with motivated reasoning and dysrationalia, the result could be truly toxic.

Earned dogmatism can also be seen in "Nobel disease": the tendency for Nobel prizewinners to develop bizarre theories later in life. The most notorious is Kary Mullis, who pioneered the polymerase chain reaction that is now essential for genetics research, but later came out as a climate change sceptic and AIDS denialist. Or James Watson, one of the discoverers of DNA, who still holds outdated and prejudiced views about racial differences in intelligence, despite frequent criticism from respected colleagues. The undoubted status that comes from winning a Nobel prize allows them to deny even the most basic evidence that runs contrary to their opinions.

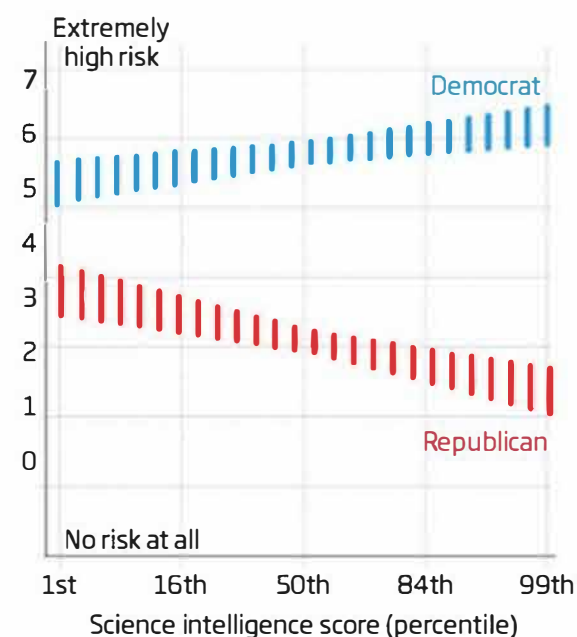
Corporate meeting syndrome

Sometimes, smart people may act stupidly because of the culture around them – a phenomenon we can all probably recognise from the workplace.

One study at Virginia Tech, for instance, gathered small groups of people and gave them each some abstract problems to do on a computer, while broadcasting their progress

Blue and red thinking

Participants in a US study were asked how much risk they believe global warming poses to human health, safety or prosperity



SOURCE: KAHAN, D. M. ET AL. 2016

Their response varied according to their political beliefs, but was amplified by their scientific literacy

New York University. Dunning and Kruger gave students tests on grammar and logical reasoning, and then asked them to rate how well they thought they had performed. Ironically, it was the worst performers who consistently showed an unwarranted confidence in their own abilities.

The Dunning-Kruger effect has now been replicated many times. Those studies have mostly examined basic skills such as numeracy. If you look at people with specialist expertise, however, a very different picture emerges. Nate Kornell at Williams College in Massachusetts, for instance, presented a group of mathematicians, historians and athletes with certain names that represented significant figures within each discipline and asked if they knew who they were. They had to answer "yes", "no", or "don't know". The participants were far more likely to claim recognition of the figures that were supposed to come from their own discipline – even if they were fake.

Matthew Fisher, then at Yale University, saw something similar when he quizzed university graduates on the subject in which they majored. He wanted to check their knowledge of the core topics of the degree, so he first asked them to estimate how well they understood some of the fundamental principles of their discipline; a physicist might have been asked to gauge their understanding of thermodynamics;

relative to the other team members on their screen. The feedback paralysed some of the candidates, lowering their scores compared with their performance on a previous test. Despite having started out with roughly equal IQs, the participants eventually separated into two distinct strata, with some people appearing to be particularly sensitive to the competition.

It seems that one person vaunting their status may cause anxiety in others because of the comparisons, leading them to underperform. As one of the researchers, Read Montague, puts it: "You may joke about how committee meetings make you feel brain dead, but our findings suggest that they may make you act brain dead as well."

Similar effects can be seen when teams set about solving a logical or creative task using their "collective intelligence". Groups with one or two over-zealous members who dominate the conversation – even if they are highly intelligent – tend to perform worse than groups in which everyone is given a chance to contribute equally. In these cases, the interpersonal dynamics matter more than the group's average IQ in determining the group performance. That is because a small number of people are effectively quashing the intelligence of those around them. ■

David Robson is the author of *The Intelligence Trap*, published by Hodder & Stoughton on 7 March