THE NORM CHRONICLES

Despite starting out telling stories as an English Literature graduate working in journalism, **MICHAEL BLASTLAND** somehow learned to count, devising the Radio 4 programme about numbers *More or Less* and writing, with Andrew Dilnot, *The Tiger That Isn't*, a guide to numbers in the news. On ice skates, he is life-threatening (mostly it's his own life) but more afraid of other people's raised umbrellas. His other risk dislikes include confined spaces, heights and fairground rides.

DAVID SPIEGELHALTER is a statistician who rejoices in the title of Winton Professor for the Public Understanding of Risk at Cambridge University. He is, or was, a proper academic and has far too many letters after his name, but feels his greatest achievement is not doing badly in the risky TV programme *Winter Wipeout*. He lives in a flood zone, but is more anxious about forgetting where he put the house keys. He particularly likes heights, confined spaces and fairground rides.

Together, Blastland and Spiegelhalter sound like a Dickensian music-hall act or a firm of dodgy solicitors. But they think that combining ideas and perspectives is the best way to make sense of the subjects of this book: danger, risk and chance – subjects that could be said to exist, as they hope to show, only in a clash of viewpoints.

THE NORM CHRONICLES

Stories and Numbers about Danger

MICHAEL BLASTLAND
and
DAVID SPIEGELHALTER

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INTRODUCTION

A SHORT STORY about danger:

One day, by devilish coincidence, three people travelling separately on the tube – Norm, Prudence and Kelvin – saw three unattended bags.

For Norm it was a dusty-blue canvas hold-all on the floor, tucked against the seat on his side. At first, he thought nothing of it. Then he looked again, and then up and down the carriage. Almost empty.

'Calm, Norm,' he said to himself, and reached down to pull up his socks – the green thermal ones – glancing sideways for wires. He sat up and forced himself to focus on the probabilities, scratched his nose, concluded several times that the bag had been forgotten, that's all, stood up and went slowly to the far doors to get off at the next stop and enjoy the extra walk.

When Prudence looked up from *Fifty Shades of Grey* to see a pristine rucksack on the seat opposite, she felt quickly sick. If it has a travel tag, someone is taking it somewhere. If it doesn't ...

It didn't. She thought of her children, motherless, crying, and lost the strength to move. Her mind filled with hellish images of herself blown apart and her hair ruined.

Counting out the last seconds of her life, ticking to the blast, she gestured and mouthed at a passenger standing nearby, a warning, a hope: 'a ... bag,' she mumbled, and pointed like the ghost she was becoming.

'Oh, yeah,' he said, and grabbed it. 'Cheers.'

And Kelvin? When he clocked a black briefcase as the doors slid open, he opened it – what else? Picked it up, sat down, flipped up the sucker's lid, took out a folded *Daily Telegraph* and slid it into the side-pocket of his leather jacket, shuftied a wad of paperwork, noticed a foil wrap down the side, teased it open, lifted it to his nose, snorted – with an eye on the teenage girl further down, doing her lashes – threw in the wrapper, closed the lid, put down the bag, sat back and closed his eyes.

Three people, three points of view about danger, to which we could add many more. What's yours? Danger, as every experience and a million stories tell us, is in the nerves of the beholder.

But not entirely. There are also numbers.

Here are two. The first is terrible and well known: on 7 July 2005, 52 people died in terrorist bomb attacks on underground trains and a bus in central London. Second, in 2011 about 30,000 bags were left on London Transport. Let that sink in: 30,000.

So, is an unattended bag on the tube dangerous? How do the numbers and stories compare: the particular stories of the 52, and those of Norm, Kelvin and Prudence?

Leave that question burning for a moment, for another short story, a true and famous one.

One day Anna and her friends went skiing. Anna was a good skier, and in any case there's not much chance that skiing will kill you. Then she lost control. She fell onto her back on a frozen stream near a waterfall. A hole opened in the ice. Freezing water poured into her clothes and pulled her in, head first.

She would have been dead in minutes, but under the ice she found an air pocket. She could breathe, for a while. First her friends, then a rescue team, tried to pull her out. They failed. They tried to dig her out. The ice was too hard.

Anna remained conscious for 40 minutes. But finally her breathing slowed, and then stopped. Then so did her pulse. It was another 40 minutes before she was pulled clear.

Normal body temperature is 37°Celsius. Hypothermia begins to set in at about 35°C. When Anna arrived at hospital, her temperature was 13.7°C. No one that cold had ever lived.

But the doctors did not give up. Slowly, patiently, they warmed her blood outside her body, then pumped it back into her veins. More than three hours after she stopped breathing, more than two hours after she arrived at hospital, Anna's heart began to beat again.

But when she woke, ten days later, it was to find herself paralysed from the neck down, and one of her first feelings was anger that she had been revived, for this. Then she made an almost full recovery. A few years later she was working as a radiologist at the hospital that saved her life. She still goes skiing.*

Anna's story is now celebrated – as a marvel of survival and a medical revelation. But for us it makes a different point that has little to do with human endurance or scientific understanding of the effects of extreme cold, and is simply this: Anna rode the mother of all fortune's roller-coasters. At every turn in a twisting tale, at every roll of the dice for good or bad, it was as if she threw six 6s.† All her luck was extreme.

Anyone can fall, even those who ski well. But how and where Anna fell – into that concurrence of water, hole and hard ice – was absurdly unlikely. Then to find an air pocket was a godsend, or seemed so, but for the maddening, desperate twist that made it so hard to pull her out. To be visibly dead from such extreme cold and yet live was impossible, until she did it; then to survive but in the end wake up paralysed, except that the end was still to come with almost full recovery, was one amazement after another. And behind every turn was the most twisted of all: that it was near-death that saved her, when fatally bitter cold turned out – by slowing her metabolism down nearly to a stand-still at just the right moment – to preserve a kernel of life precisely when breath stopped. Life is sometimes improbable.

What our brief sample of stories and numbers tells us is that risk

* The story of Anna Bagenholm comes from various sources, including *The Lancet*[1] and Atul Gawande, in his book *Better*.[2]

† The usual phrase here is that Anna beat or defied the odds. Strictly speaking, no one can defy the odds. Odds simply describe how many people are expected to be on each side of a possibility. Even a million to one against when you turn out to be the one is not beating the odds: it *is* the odds.

is two-faced: on one side are the seemingly hard-nosed calculations of probability, such as the 20 per cent extra risk of cancer from eating sausages that hits the headlines, or the infinitesimal percentage of bags, unattended or otherwise, that explode in London, or the chance of surviving if your body freezes, you stop breathing and your heart quits; on the other side are people and their stories, like Anna, or the 52.

Numbers and probabilities tend to show the final account, the risks to humans en masse, chance in aggregate summarised for whole populations. These numbers reveal hypnotic patterns and rich information. But they are indifferent to fate and its drama. Numbers can't care and don't care; life and death are percentages, unafraid of danger, shrugging at survival, stating only what's risky, what's not, or to what degree, on average. They are silent about how much any of this, right down to a love or fear of sausages or ski slopes, matters.

But we – and you – are not averages. We are also subjective, we do care and might even argue about skiing, terrorism and sausages. We have our instincts, feelings, hopes, fears and confusions. Our intuition might not match the stats, and we might say, 'So what, I'm out of here.' Or maybe we see danger and take the leap anyway, base-jumping from a cliff edge in a wing-suit because we love the buzz (see extreme sports, in Chapter 16); maybe we run screaming from spiders (phobias appear in Chapter 25). We ask, 'Will I be safe? Will my children be safe?' But also 'Will I be in control?' (Chapter 15), 'Will I be happy?', 'Do I want this thrill?', 'Do I value this choice?' (drugs are in Chapter 9), 'Should I take this chance?' And 'How does it feel, and what's it worth' (see childbirth, in Chapter 11)?

An extreme illustration of the difference is that, as far as the mortality statistics go – the statistics used to calculate the risk of skiing, along with many of life's other hazards – nothing happened to Anna. She was a tick, not a cross; she lived and didn't die, and that's it, all that the mortality record has to say.

Danger is the shark in shallow waters, the pills in the cupboard or a grand piano teetering on a window ledge while children skip below. It is the diet too rich in cream, the base-jump, the booze, the pedestrian and the double-decker, driving a car fast or the threat of weirder weather. It is the spills and the thrills. In other words, danger is everywhere and

always. And in all cases we find those same two faces: one impassive, formal, calculating, the other full of human hopes and fears.

The unusual aim of this book is to see both at once. We hope to show people and their stories *and* the numbers, together. We set out to do this mainly to explore how these two perspectives compare, but along the way we found that this raised an awkward question: are the two faces of risk compatible? Can risk claim to be true to the numbers and to you at the same time? We will present both sides as we try to find out, but we will tell you our conclusion now.

It can't. For people, probability doesn't exist.

That's an extraordinary claim from writers sometimes geeky enough to have two hoods on their anoraks. But with a little luck, the proof of it – and exactly what it means – will emerge through the clash of perspectives in this book.

The numbers and probabilities are all here. With them we show the chances of a variety of life's tricks and traps: risks to children; risks of violence, accident and crime; dangers from sex, drugs, travel, diet, lifestyle; risks of natural disaster and more. We say how we know these risks, why sometimes we can't know them and how they've changed, and we use the best methods we can find or invent to make them easy to grasp. In particular, we use a cunning little device called the MicroMort and a new one called the MicroLife, two friendly units of deadly risk that we think offer real insight. You will meet them soon enough. In this respect, the book is a new guide to life's odds.

The human factor is here too. People don't always do what the numbers seem to suggest they should. Some feel safe when they are in danger and in danger when they are safe, while the numbers may matter less to us than feelings of power or freedom, our values, our likes and dislikes and our emotions.

One reaction to the difference is to tell people they are stupid, and that if only they listened to the experts they'd live longer and sleep sounder. Another is to say that the experts may be right about the averages but that they clearly never had kids or an undiagnosed chest pain, or wanted to take a corner too fast.

Either way, the human factor can't be ignored. To show it, we use