

# This is improbable too

Marc Abrahams, *Guardian* columnist and founder of the Ig Nobel prizes, with more research to make you smile and think

I collect stories: stories about improbable things, things that make people laugh, then think. Improbable is, simply: what you don't expect.

I research improbable research, and in the April 2013 issue of this publication I shared some of this from my book *This Is Improbable*. In *This Is Improbable Too*, that 'too' is meant to imply two things. First, that this book is second. And second, that the stories I write about do not stand alone – the people who did these things also did other things, some of which are fully as unexpected. It's easy to assume that the good story you know about a person is *the* good story about that person. In my experience, poking through studies and books, and chatting and gossiping with thousands of improbable people, if there's one good story about a person, chances are high that other stories exist too, and that some of those stories are even better than the one you knew about.

## The gift of incompetence

In their Cornell studies, psychologists David Dunning and Justin Kruger supplied scientific evidence that incompetence is bliss, for the incompetent person. They staged a series of experiments, involving several groups of people. Beforehand they made some predictions, most notably that:

- I incompetent people dramatically overestimate their ability; and
- I incompetent people are not good at recognising incompetence – their own or anyone else's.

In one experiment Dunning and Kruger asked 65 test subjects to rate the funniness of certain jokes. They then compared each test subject's ratings of the jokes with ratings done by eight professional comedians. Some people had a very poor sense of what others find funny – but most of those same individuals believed themselves to be very good at it, rather like David Brent of *The Office*.

Another experiment involved logic questions from law school entrance exams. The logic questions produced much the same results as jokes. Those with poor reasoning skills tended to believe they were Bertrand Russell or Mr Spock.

Overall, the results showed that incompetence is even worse than it appears to be, and forms a sort of unholy trinity of cluelessness. The incompetent don't perform up to speed; don't recognise their lack of competence; and don't even recognise the competence of other people.

Dunning explained why he took up this kind of research: 'I am interested in why people tend to have overly favorable and objectively indefensible views of their own abilities, talents, and moral character. For example, a full 94 per cent of college professors state that they do "above average" work, although it is statistically impossible for virtually everybody to be above average.' In 2008 he and his colleagues revisited their findings with 'Why the unskilled are unaware: Further explorations of (absent) self-insight among the incompetent' in order to show

that their assessment was not a statistical artifact. Of course, Dunning and Kruger are themselves university professors (though at the time they did their original experiment, Kruger was still Dunning's student).

If you have colleagues who are incompetent and unaware of it, Dunning and Kruger's research is a useful and convenient tool. I recommend that you make photocopies of their reports, and send them – anonymously, if need be – to each of those individuals, much as the Italian economist Professor Cipolla originally distributed his 1976 essay *The Basic Laws of Human Stupidity* among his closest friends.

## Brilliant early explanations of genius

Psychologists still grind away (sometimes at each other) at explaining what genius is, and where it comes from. The effort, now weary and tendentious, was exciting in its earlier days. In 1920 Lewis Terman and Jessie Chase of Stanford University published a report called 'The psychology, biology and pedagogy of genius' summarising all the important new literature on the subject.

Those early 20th-century psychologists showed a collective genius for disagreeing about almost everything.

J.C.M. Garnett, in a study called 'General ability, cleverness, and purpose', offered a formula for genius. Measure a person's general ability; then measure their cleverness, then square both numbers and add them together, then take the square root. Genius.

We learn about C.L. Redfield, who 'cites 571 specially selected pedigrees to prove his theory' that 'rapid breeding inevitably leads to the production of inferior stock', but that 'inferior stock can be transformed into superior stock in 100 years, and into eminent men in 200 years'.

James G. Kiernan wrote a monograph called 'Is genius a sport, a neurosis, or a child potentiality developed?' Terman and

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Chase tell us that 'Kiernan, after a description of the ability of various men of genius, arrives at the conclusion that genius is not a sport nor a neurosis.' Kiernan's paper hints, right at the start, that its author knew neurosis intimately. The byline lists his credentials at some length.

A book by Albert Mordell explains that 'the literary genius is one who has experienced a repression, drawn certain conclusions from it, and expressed what society does', and that 'By making an outlet for their repressions in imaginative literature Rousseau, Goethe and many others have saved themselves from insanity'.

Bent on being thoroughly inclusive, Terman and Chase mention a book called *Jesus, the Christ, in the Light of Psychology*, by G. Stanley Hall. 'In two volumes', they write, 'Hall has given us an epochmaking study, chiefly from the psychological point of view, of the greatest moral genius of all time.' Terman and Chase seem to carefully dodge a bullet (or maybe a firing squad or even a massive artillery bombardment) of criticism, remarking only that 'It is impossible even to characterize such a monumental work in the few lines here available, much less to summarize it'. There's much more.

All told, Terman and Chase describe 95 scholarly and semi-scholarly papers and books, devoting a sentence or three to each of them. The exception, the lengthiest section of their report, is a lavish description of Terman's own recent studies, commencing with the words 'Terman devotes 102 pages of his latest book to...'. Terman's writings, reportedly, are filled with insights 'of special interest'.

### Princely behaviour

By reputation, stockbrokers have manipulative personalities. So do people who sell cars or buildings. Professor Abdul Aziz took the measure of these groups of professionals, hoping to see whether each lives up or down to the legend.

Aziz, who teaches business at Morgan State University in Baltimore, Maryland, together with colleagues published three studies a decade ago: 'Relations of Machiavellian behavior with sales performance of stockbrokers'; 'Machiavellianism scores and self-rated performance of automobile salespersons'; and 'Relationship between Machiavellianism scores and performance of real estate salespersons'. All appear in the journal *Psychology Reports*.

Aziz explains that a Machiavellian person is someone who 'views and manipulates others' for 'personal gain, often against the other's self-interest'.



**Stockbrokers, car salespersons and estate agents appear to show positive relationship between Machiavellianism and sales performance**

He says this 'modern concept of Machiavellianism was derived from the ideas of [Niccolò] Machiavelli as published in [his book] *The Prince* in 1532', and that interest in it as a personality trait blossomed in the 1970s.

Aziz used a questionnaire based on psychological tests devised in the 1960s that claim to measure Machiavellianism by presenting statements and asking the

test-taker to agree or disagree (see [tinyurl.com/5vzjmzg](http://tinyurl.com/5vzjmzg)). The statements range from the goody-goody: 'Most people who get ahead in the world lead clean, moral lives', to the not-so-goody: 'The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught'.

Aziz prepared similar questions.

He got answers from 110 brokers who sell stocks on a commission basis. Aziz also wanted to know how good these stockbrokers were at their sales work, so he asked them to compare their own sales performance with that of their colleagues.

Aziz would have preferred not to take the brokers' word for this. But, he writes, 'the company was not willing to disclose the actual amount of sales by individual stockbrokers'. After analysing what the stockbrokers told him, Aziz reports a strong association between the brokers' 'Machiavellian behavior scale' rank and how good they claim to be at selling.

His conclusion: The stockbroker data support the 'assumption of a positive relationship between Machiavellianism and sales performance'.

Aziz then did a similar study of 80 car salespersons, all of whom work on commission. He asked them his Machiavellianism survey questions. He also asked each to tell him '(a) the number of cars sold during the previous year and (b) the income bracket that most closely matched their income during that year'. His conclusion: 'What the car salespersons told him provides 'partial support for earlier findings'.

Rounding out the Big Three, Aziz then talked with 72 estate agents who earned their money selling property on commission. The things they told him, Aziz says, 'support earlier results from samples of stockbrokers and automobile salespersons'.

A few other studies have cited Aziz's

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## improbable research

work. One of the first was a Canadian report called 'Psychopathy and the detection of faking on self-report inventories of personality'.

### Beauty queens and battling knights

The authors, at Stockholm School of Economics and Stockholm University, explain: 'We explore the relationship between attractiveness and risk taking in chess. We use a large international panel dataset on high-level chess competitions which includes a control for the players' skill in chess. This data is combined with results from a survey on an online labor market where participants were asked to rate the photos of 626 expert chess players according to attractiveness. Our results suggest that male chess players choose significantly riskier strategies when playing against an attractive female opponent, even though this does not improve their performance. Women's strategies are not affected by the attractiveness of the opponent.'

### Defending payphones and parking spots

As pay telephones disappear from our cities, with them vanish opportunities to watch an entertaining, maddening form of behaviour. The behaviour was documented in a study called 'Waiting for a phone: Intrusion on callers leads to territorial defense'. The report came out in 1989, before mobile phones nudged public pay phones towards oblivion.

Professor R. Barry Ruback, with some of his students at Georgia State University, performed an experiment. They began by asking people what they would do if, while talking on a public pay telephone, they noticed someone else waiting to use that phone. Most people said they would hurry up and terminate their call.

The researchers put that common belief to the test. They lurked discreetly near public telephone booths in the Atlanta area. Seeing someone engaged in a call on a pay phone, they would send a trained stooge to hover expectantly. The stooge 'simply stood behind the caller, sometimes looking at his watch and putting his hands in his pockets'. Sometimes they sent two stooges. Every stooge was 'instructed not to stare at the subject'.

In the absence of stooges, people's phone calls lasted on average about 80 seconds. When a single stooge stood nearby, people stayed on the phone longer – typically about 110 seconds. And when two stooges queued up, clearly waiting,

waiting, waiting for access to the telephone, people kept using that phone much longer – averaging almost four minutes.

After varying the experiment in small ways, trying to tease out exactly what was or wasn't happening, the researchers decided they had seen a clear cause and effect – that 'people stayed longer at the phone after an intrusion, primarily because someone was waiting to use the phone'.

Even in the absence of payphones, one can, while strolling through town, see bursts of this kind of 'territorial defence'. They happen in the street and in car parks, wherever motorists vie for parking spaces.

Professor Ruback went behaviour-hunting in a shopping mall parking lot near Atlanta. In 1997 he and a colleague, Daniel Juieng, produced a report with a title that hints at more violence than the paper delivers: 'Territorial defense in parking lots: Retaliation against waiting drivers'. When the researchers saw someone get into a car, preparing to drive away, they measured the time until the car actually departed. They saw that, consistently, drivers took longer to leave if someone else was obviously waiting for their space.

Ruback and his minions forced the issue, sending their own drivers, in various cars, all with particular instructions. They learned that if their 'intruding' driver honked a horn, the departing driver would take an especially long time to leave. They also learned that men would leave more quickly if they saw that the person waiting to take their place drove a blatantly more expensive vehicle. Women, though, were not cowed by such things.

### Red: bull

Bulls care little about the redness of a matador's cape. Psychologists have been pretty sure about that since 1923, when George M. Stratton of the University of California published a study called 'The color red, and the anger of cattle'.

'It is probable', Stratton opined, 'that this popular belief arises from the fact that cattle, and particularly bulls, have attacked persons displaying red, when the cause of the attack lay in the behavior of the person, in his strangeness, or in other factors apart from the color itself. The human knowledge that red is the color of blood, and that blood is, or seemingly should be, exciting, doubtless has added its own support to this fallacy.'

Professor Stratton, aided by a Miss Morrison and a Mr Blodgett, conducted an experiment on several small herds of cattle – 40 head altogether, a mixture of bulls and bullocks (bullocks are castrated

bulls) and cows and calves, including some who were accustomed to wandering the range and others who lived in barns.

The researchers obtained white, black, red and green strips of cloth, each measuring two by six feet. These they attached 'endwise to a line stretched high enough to let the animals go easily under it; from this line the colors hung their 6 feet of length free of the ground, well-separated, and ready to flutter in the breeze'.

The cattle showed indifference to the banners, except sometimes when a breeze made the cloth flutter. Males and females reacted the same way, as did 'tame' and 'wild' animals. Red did nothing for them.

Farmers seem to have already suspected this. Stratton surveyed some. He reports that 'Of 66 such persons who have favored me with their careful replies, I find that 38 believe that red never excites cattle to anger; 15 believe that red usually does not excite them to anger, although exceptionally it may; 8 believe that it usually so excites, though exceptionally it may not; and 3 believe that it always so excites'.

One of those three dissenters described her views, well, colourfully: 'A lively little Jersey cow whom I had known all her six years of life, chased me through a barbed wire fence when I was wearing a red dress and sweater, and never did so before or after. I changed to a dull gray, and reentered the corral, and she paid no attention to me, and let me feed and water her as usual. Also a Durham bull whom I had raised from a calf, and was a perfect family pet, chased me till I fell from sight through some brush when I was wearing the same outfit of crimson.'

More typical, though, was the farmer who told Stratton: 'In referring to the saying, "Like waving a red rag before a bull", I have found that to wave anything before a bull is dangerous business.'

### Having the time of your month

The 'Menstrual Joy Questionnaire' was developed in 1987. It entered the world as part of a book called *The Curse: A Cultural History of Menstruation*, written by Janice Delaney, Mary Jane Lupton and Emily Toth. They were distressed at the existence and influence of the 'Menstrual Distress Questionnaire', a dour piece of work created 19 years earlier by Rudolf H. Moos at Stanford University.

Moos was a psychiatrist. He delved, professionally, into many kinds of distress, among them: depression; problem drinking; work-induced stress; and the social atmospheres of psychiatric

wards. Though few held it against him, Moos had little first-person experience of menstrual emotions. His was a rigorous academic understanding.

The three menstrual joy scholars were a cheerier lot. They were literary folk. Delaney was director of a prestigious fiction-writing award given by the Folger Library in Washington, DC. Lupton and Toth were English professors: Lupton at Morgan State University in Baltimore, Toth at Pennsylvania State University. Their menstrual savvy came from personal experience supplemented by a vast knowledge of literature.

The Menstrual Joy Questionnaire is short and simple, inquiring into 10 joyful menstrual matters, specifically: (1) high spirits; (2) increased sexual desire; (3) vibrant activity; (4) revolutionary zeal; (5) intense concentration; (6) feelings of affection; (7) self-confidence; (8) feelings of euphoria; (9) creativity; and (10) feelings of power.

Seven years after Delaney, Lupton and Toth launched their admittedly whimsical questionnaire, a team of researchers tried to gauge its impact. Joan Chrisler, Ingrid Johnston, Nicole Champagne and Kathleen Preston of Connecticut College published a study, called 'Menstrual joy: The construct and its consequences', in the journal *Psychology of Women Quarterly*. Their purpose, they stated, was 'to examine participants' reactions to the concept of menstrual joy... We found it too difficult to resist the temptation to see what women would think of the construct'.

And so they gave the Menstrual Joy Questionnaire to 40 women. Then they asked five questions:

- I What was your reaction to seeing a questionnaire entitled 'Menstrual Joy'?
- I Have you previously regarded menstruation as a positive event in your life? If yes, describe the menstrual cycle's positive aspects in your own words.
- I Did the Menstrual Joy Questionnaire encourage you to view menstruation in a different way? If yes, please explain.
- I Do you think you will be aware of or anticipate some of these positive aspects during your next menstrual cycle?
- I Do you discuss menstruation openly? If so, with whom?

Here, in the researchers' own words, is what they learned: 'The most common reactions to the questionnaire were incredulity or disbelief (27.5%), shock or surprise (22.5%) or the belief that the title

was sarcastic or ironic (25%). Other participants expressed initial interest (12.5%), amusement (12.5%), confusion (12.5%), irritation or annoyance (5%), appreciation (2.5%), or sadness (2.5%). Some participants expressed more than one reaction.'

'The results of this study', they concluded, 'are interesting for several reasons.'

Several years later, two British psychologists, Aimee Aubeeluck at the



**Red bull – 'to wave anything before a bull is dangerous business'**

University of Derby and Moira Maguire at the University of Luton, decided to replicate Chrisler et al.'s experiment, but chose to remove the title of the questionnaire altogether, so that no 'priming' for joy or distress would be introduced by the researchers. They found that the wording of 'Joy' questions alone was enough to make women think more favourably about menstruation 'as a natural event'.

### Naughty thoughts, hemispherically

When a person thinks about naughty things, does one side of the brain get more exercised than the other? Eight scientists, led by Debra Lieberman, a professor of evolutionary psychology at the University of Miami, studied that question. Their report, 'Hemispheric asymmetries during processing of immoral stimuli', appears in the journal *Frontiers in Evolutionary Neuroscience*. The stated goal is to describe 'the neural organisation of moral processing'.

The researchers had to work with a few limitations – the same limitations that apply to anyone who tries to describe what's going on in the brain.

With the exception of a few crackpots or geniuses, scientists don't claim to understand how the 100,000,000,000 or so parts of the human brain manage to think thoughts. Many of those multitudinous parts are connected to each other in complex ways that are quirkily different in every person. Some of the connections change over the course of a life, or a day, or even a few minutes. Many tiny brain parts are clumped into big conglomerations, some quite distinct (hello, cerebellum!), but others have fuzzy locations and borders.

The study does not risk getting bogged down in those larger, complicated conundrums. It restricts itself to the simple question: How does immorality play out in the brain?

The scientists sought their answer by recruiting some test subjects. They confronted each volunteer with several levels of immorality, in the form of words and images.

The team used MRI machines to indirectly (via electromagnetic emissions) monitor where largish amounts of blood flowed in the brain as each volunteer confronted each example of immorality. In theory, anyway, blood flows most freely near whichever brain parts are actively thinking, or have just thought, or are just about to think, or are busily doing something else.

In one test, volunteers saw different kinds of printed statements. Some were about pathogens ('You eating your sister's spoiled hamburger, You sipping your sister's urine, You eating your sister's scab'); some about incest ('You giving your sister an orgasm, You watching your sister masturbate, You fondling your sister's nipples'); some about 'nonsexual immoral acts' ('You burgling your sister's home, You killing your sister's child'); and others about 'neutral acts' ('You reading to your sister, You holding your sister's groceries').

In other tests, volunteers saw other kinds of statements or pictures, each chosen for its evident moral content.

After all the immorality was seen, and the measurements made, the researchers calculated that the left side of the brain had been more involved than the right side. Thus, concludes the study: 'There is a left-hemisphere bias for the processing of immoral stimuli across multiple domains.'

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