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***David and Goliath*, by Orazio Gentileschi (c. 1605–1607).**

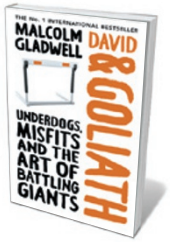
PSYCHOLOGY

Improbable heroes

Philip Ball finds much to engage and surprise in Malcolm Gladwell's study of power and how it is misinterpreted.

We think of David as the weedy foe of mighty Goliath, but he had the upper hand all along. The Israelite shepherd boy was nimble and could use his deadly weapon without getting close to his opponent. Given the skill of ancient slingers, this was more like fighting pistol against sword. David won because he changed the rules; Goliath, like everyone else on the battlefield, was anticipating hand-to-hand combat.

That biblical story about power and how it is used, misused and misinterpreted is the frame for Malcolm Gladwell's *David and Goliath*. "The powerful are not as powerful as they seem," he argues, "nor the weak as weak." Weaker sports teams can win by playing unconventionally; the children of rich families are handicapped by complacency; and smaller school-class sizes do not necessarily produce better results.



David and Goliath: Underdogs, Misfits and the Art of Battling Giants
MALCOLM GLADWELL
Little, Brown: 2013.

Gladwell describes a police chief who cuts crime by buying Thanksgiving turkeys for problem families, and the doctor who cured children with leukaemia using drug cocktails that others thought to be lethal. Conventional indicators of strength, such as wealth or military superiority, can prove to be weaknesses; what look like impediments, such as broken homes or dyslexia, can work to one's advantage. Students who are provincial high-flyers may underachieve at Harvard because they are not accustomed to being surrounded by even more brilliant peers, whereas at a mediocre university they might have excelled. Even if some of these conclusions seem obvious in retrospect, Gladwell is a consummate storyteller and you feel that you would never have articulated the point until he spelled it out.

But we all know of counter-examples. Whether someone is demoralized by or thrives on the stimulus of an academic hothouse depends on particular personal attributes and all kinds of other intangibles. More often than not, dyslexia and broken homes really are disadvantages. The achievement of a school class may depend more on what is taught, and how, and why, than on size.

The case of medic Emil J. Freireich, who developed an unconventional but ultimately successful treatment for childhood leukaemia, is particularly unsettling. If Freireich had good medical reasons for administering untested mixtures of aggressive anti-cancer drugs, they are not explained here. Instead, there is simply a description of his bullish determination to try them out come what may, seemingly engendered by his grim and impoverished upbringing. Yet determination alone can equally prove disastrous — as shown by bacteriologist Robert Koch's misguided conviction that the tuberculosis extract tuberculin would cure the disease.

Even the biblical meta-narrative is confusing. So was David not after all the plucky hero overcoming the odds, but more like Indiana Jones defeating the sword-twirling opponent by pulling out a pistol and shooting him? Was that cheating, or just thinking outside the box? In any case, there are endless examples of the stronger side winning, whether in sport, business or war, no matter how ingenious their opponents. Mostly, money does buy privilege and success. So why does David win sometimes and Goliath other times? Is it even

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clear which is which (it seems that poor Goliath might have suffered from a vision impairment)?

These complications are becoming clear, for example in criminology. Gladwell is very interested in why some crime-prevention strategies work and others do not. But although his 'winning hearts and minds' case studies are surely part of the solution, recent results from behavioural economics and game theory suggest that there are no easy answers beyond the fact that some form of punishment (ideally centralized, not vigilante) is needed for social stability.

Some studies suggest that excessive punishment can be counter-productive; others show that people do not punish simply to guard their own interests, and will impose penalties on others even to their own detriment. Responses to punishment are culturally variable. In other words, punishment is a complex matter that resists simple prescriptions.

Besides, winning is itself a slippery concept. Gladwell's sympathies are for the underdog, the oppressed and the marginalized. But occasionally his stories celebrate a very narrow view of what constitutes success, such as becoming a Hollywood mogul or the president of an investment-banking firm — David turned Goliath, with little regard for what makes people genuinely inspiring, happy or worthy.

"Gladwell's sympathies are for the underdog, the oppressed and the marginalized."

None of this is a problem of Gladwell's writing, which is always intelligent and perceptive. It is a problem of form. His books, like those of legions of inferior imitators, present a 'big idea'. But it is an idea that works only selectively, and it is hard for him or anyone else to say why. These human stories are too context-dependent to deliver a take-home message, at least beyond the advice to not always expect the obvious outcome.

Perhaps Gladwell's approach does not lend itself to book-length exposition. In *The Tipping Point* (2000) he pulled it off, but his follow-ups *Blink* (2005), about the reliability of the gut response, and *Outliers* (2008), a previous take on what makes people succeed, similarly had theses that unravelled the more you thought about them. What remains in this case are ten examples of Gladwell's true forte: the long-form essay, as engaging, surprising and smooth as a New York latte. ■

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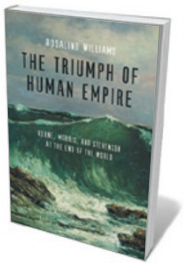
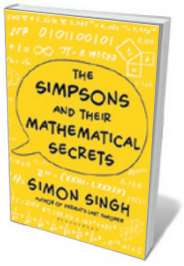
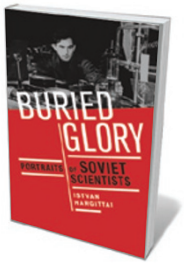
Books in brief



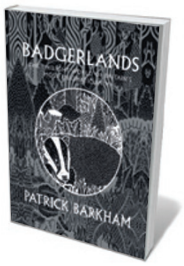
The Triumph of Human Empire: Verne, Morris, and Stevenson at the End of the World
Rosalind Williams UNIVERSITY OF CHICAGO PRESS *(2013)*
In *Nova Atlantis* (1624), the philosopher Francis Bacon characterized the human urge to dominate the globe as "the enlarging of the bounds of Human Empire, to the effecting of all things possible". By the late nineteenth century, a handful of luminaries recognized the destructive potential of that urge. Through the lives of three — Jules Verne, Robert Louis Stevenson and William Morris — science historian Rosalind Williams reveals how the transcendent power of the romantic impulse ignited environmental consciousness.



The Simpsons and Their Mathematical Secrets
Simon Singh BLOOMSBURY *(2013)*
As fans of *The Simpsons* know, the television programme's writing team is peppered with mathematicians. Physicist and writer Simon Singh skips joyously through key episodes of Matt Groening's saga, unpacking the maths embedded in each as he goes. Intoning "Be there or be a regular quadrilateral", Singh disentangles the link between pi and Homer as "Simple Simon, Your Friendly Neighborhood Pie Man"; explores Homer's "doughnut-shaped universe", admired by a cartoon Stephen Hawking in the episode 'They Saved Lisa's Brain'; and more. A chewy treat for maths geeks.



Buried Glory: Portraits of Soviet Scientists
Istvan Hargittai OXFORD UNIVERSITY PRESS *(2013)*
Nine of the fourteen Soviet scientists profiled in chemist Istvan Hargittai's tribute are buried in Moscow's Novodevichy Cemetery. But the lifting of the Iron Curtain led to a much grimmer interment, Hargittai argues: a golden era for science dimmed and died. Hargittai has delved into archives and personal recollections to bring its stars to life. A key chapter in twentieth-century research unfolds, embodied by the likes of Petr Kapitza, the low-temperature physicist who courageously supported persecuted colleagues, and the daringly original crystallographer Aleksandr Kitaigorodskii.



Badgerlands: The Twilight World of Britain's Most Enigmatic Animal
Patrick Barkham GRANTA *(2013)*
For a beast that few in Britain have seen alive, badgers have a powerful national presence — whether linked to bovine tuberculosis or place names such as Badgers Mount. Patrick Barkham revels in their ubiquity, ethology and "fright mask: the long white face burnished by two black stripes". As he visits scientists and enthusiasts, Barkham is both acute and engaging, noting, for example, the speculation that Roman emperor Marcus Aurelius inspired Kenneth Grahame's gruff Badger in his 1908 *The Wind in the Willows*.

The Secret Language of Color: Science, Nature, History, Culture, Beauty of Red, Orange, Yellow, Green, Blue & Violet
Joann Eckstut and Arielle Eckstut BLACK DOG & LEVENTHAL *(2013)*
The evanescent phenomenon of colour has gripped great minds from Plato to Isaac Newton, all the way through to researchers who now probe the links between blue light and circadian rhythms. In this many-hued tome, Joann and Arielle Eckstut zip through optics and electromagnetism. They then explore colour in art, such as the pointillist work of Georges-Pierre Seurat, and in nature, from minerals to nebulae. Fact-filled and flamboyantly illustrated. **Barbara Kiser**

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