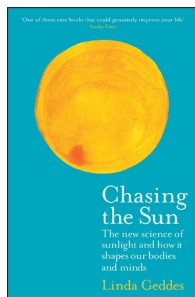


Chasing the Sun: The New Science of Sunlight and How it Shapes Our Bodies and Minds

Linda Geddes

Wellcome Collection, 2019, PB, 256pp,
£6.99, 978-1781258330



LET THERE BE LIGHT

The sun has had bad press. As GPs we correctly declaim grim warnings to our patients about skin cancer. We rightly warn of the sharp rise in malignant melanomas, the risks of sunbathing on holidays, and frequenting those tanning salons that benight our high streets. On the other hand, we are aware of the sun's benefits in the production of vitamin D. My results inbox daily has at least one patient with low vitamin D, and we seem to be testing it for a range of conditions, physical and psychological, with a corresponding increase in prescribed vitamin D supplementation.

The health benefits of sunlight have been known for centuries. Hippocrates built a solarium at his treatment centre on the Greek island of Kos, and a fellow physician, Aretaeus of Cappadocia, recommended sunlight for 'lethargics.' More recently, Florence Nightingale would position patients close to windows, arguing that *'second only to their need of fresh air is their need for light ... not only light but direct sun-light'*. In the early 20th century, Niels Finzen developed light therapy for the treatment of skin tuberculosis, and Robert Koch showed that the bacterium responsible for TB could be killed by sunlight. There followed a fashion for heliotherapy, until the rise of critical voices such as those of the British surgeon John Lockhart-Mummery, who, in his book *Nothing New Under the Sun*, dismissed sunlight therapy as 'pseudo-magic'.

Linda Geddes argues that we are missing the point in this age-old binary discussion,

and instead we should focus on the integral role of the sun in the development of our circadian rhythms. This starts in utero, but, as all new parents are well aware, circadian rhythms do not fully develop until months after birth, and they continue to evolve throughout life. In adolescence the biological rhythms are shifted later, making it harder for teenagers to fall asleep at night and get up in time for school. Adults generally have well-developed rhythms, with defined changes in body temperature throughout the day and night.

In order to illustrate the importance of circadian rhythms for our health, Geddes travelled far and wide. She starts with the Amish, an American people whose rhythms are completely dictated by the sun. She describes a yard-sale at 5.30 am: *'already a man with a chin-curtain beard, and the distinctive Amish uniform of straw hat, plain shirt and braces, is firing up a barbecue, and the smell of smoke and grilled chicken intermingle with the sweet smell of desserts'*.

Living their lives in the outdoors, the Amish are exposed to far greater levels of natural light than the rest of us, and Geddes suggests that this may help account for their lower levels of depression.

In complete contrast, Geddes describes her trip to a conference in Las Vegas in 2007 when, suitably, the International Agency for Research on Cancer added night-shift work to the list of 'probable' human carcinogens. She describes her experience of Vegas as lurching *'like a confused moth, through underground malls and vast casino floors, my sense of time becoming ever more distorted'*.

She explains that exposure to bright light at night *'forces the body to feel alert when it should be sleeping, setting off a cascade of damaging effects'*.

As an example of how we can all re-engage with our circadian rhythms, Geddes travels to the German spa town of Bad Kissingen, Bavaria, historically a place of health and healing, which has now refashioned itself along the lines of 'chronobiology'. Guided by the 'chronobiologist' Thomas Kantermann, the town starts schools later in the day, holds classes outdoors, and encourages businesses to offer flexitime for the larks and owls in their workforce. Most controversially, Bad Kissingen has proposed unilaterally abandoning Daylight Saving Time, which curtails teenagers'

sleep even further, and may well have an adverse effect on their exam results.

Geddes ends her travels where she began, at Stonehenge. There she describes the 4500-year-old understanding we have had of the sun and its importance for the 'circularity of our biology'. Justifiably, after writing a book full of complex biomedical theories intertwined with delightful history and travel writing, we learn that she has graduated from a mere visitor to a guest of the Cotswold Order of Druids.

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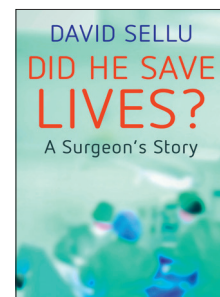
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Did He Save Lives? A Surgeon's Story

David Sellu

Sweetcroft Publishing, 2019, PB, 288pp,
£7.19, 978-1912892327



A MISCARRIAGE OF JUSTICE

One ordinary evening in February 2010 an experienced consultant colorectal surgeon saw his last patient of the day, a 66-year old retired builder who had developed abdominal pain shortly following an elective knee replacement. Three years later on a cold November day David Sellu was sentenced to prison for 2 and a half years for unlawfully killing John Hughes.

Did He Save Lives? charts the events between these two dates that would lead to the conviction of a surgeon with a previously unblemished record of gross negligence manslaughter. Sellu's methodical, sparse yet descriptive prose depicting the day-to-day of prison life belies the quiet horror of a life stripped of freedom, autonomy, and dignity.

Born in a rural village in Sierra Leone to illiterate farmers it was not in Sellu's destiny to become an eminent surgeon in England.

Two things changed that. The first was moving to the capital to be raised by his aunt, and the second was winning a scholarship to study medicine in Manchester. After years of surgical training and marrying his wife Catherine, a staff nurse at Hammersmith Hospital, Sellu had it all: four successful children, one of whom was reading medicine at his *alma mater*, a happy marriage, and a thriving NHS and private practice.

John Hughes, a private inpatient, was seen by Sellu late one Thursday evening. Hughes was 5 days post-total knee replacement but had developed abdominal pain. Sellu's plan included antibiotics, bloods, and an urgent CT scan. At home later that evening Sellu called the hospital several times to enquire about available anaesthetists. Shockingly, unlike NHS hospitals, many private hospitals do not have 24-hour anaesthetic cover. Sellu also called the residential medical officer to enquire about the results of the tests and to advise on antibiotics. The RMO reassured Sellu that the bloods were normal and the antibiotics prescribed. The bloods were never done and the antibiotics were never issued — Sellu was later blamed for both these failures. The following morning, Sellu called radiology to chase the CT scan but it was not done until later that afternoon and showed a perforation of the large bowel. Sellu would later be held responsible for the delay in the scan. Sellu tried to book the patient for theatre but the earliest he could secure both a theatre and an anaesthetist was 7.00 pm that evening. Unfortunately, the anaesthetist got delayed on another case. On a Friday evening with no 24-hour anaesthetic cover Sellu tried in vain to find another anaesthetist. Hughes was eventually operated on 3 hours later than planned and passed away 2 days later in the intensive care unit. The coroner later referred Sellu to the police, believing he had committed a crime, and Sellu was subsequently convicted of that crime — gross negligence manslaughter.

How could this happen? How could a surgeon who acted in accordance with what a body of his peers would have done at that time, with no access to an emergency anaesthetist, with no power to arrange a CT scan any earlier — be held culpable for systemic failures? How can a jury who openly expressed their confusion about exactly what issue they were deliberating on be allowed to determine the fate of a man? How can a judge be allowed to use a report commissioned by the hospital whose agenda was to exonerate itself at whatever cost instead of using the original case notes?

The conviction and incarceration of David

Sellu is one of the biggest miscarriages of justice in British history; it is also a stark reminder of our own vulnerability — as clinicians whose decisions can be scrutinised in a vacuum devoid of the systemic context, for some as persons of colour who do not fit the establishment image, as law-abiding citizens who find ourselves on the wrong side of the law. Sellu's story is also a testament to the power of perseverance, determination, and faith — faith in family, justice, and the future. Sellu wryly observes, *'Prison taught me that whatever obstacles man can invent, man can circumvent.'*

Sellu's determination to maintain his sanity and sense of hope has taught me that, whatever circumstances befall a person, they can overcome them.

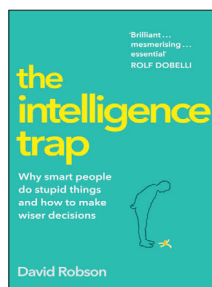
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The Intelligence Trap: Why Smart People Do Stupid Things and How to Make Wiser Decisions

David Robson

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BRAIN POWER

'A great many people think they are thinking, when they are merely rearranging their prejudices.' (William James, 19th-century psychologist)

The Intelligence Trap is written for anyone who wants to escape the above mistake — a user's guide to both the science and art of wisdom. The author asks three questions: why do smart people act stupidly? What skills and dispositions are they missing that can explain these mistakes? And, how can we cultivate those qualities that protect us from these errors? Robson is an award-winning science journalist working with BBC Future, where he specialises in psychology, neuroscience, and medicine. His skill as a journalist makes him

readable and entertaining while his scientific approach makes him credible.

Robson engages us with stories; he reviews the scientific literature (notes and references of over 50 pages) and also describes his interviews with researchers exploring intelligence and wisdom.

Part 1 defines the problem. We explore the flaws in our understanding of intelligence and the ways that even the brightest of minds can backfire — from Arthur Conan Doyle's dogged beliefs in fairies to the FBI's flawed investigation into the Madrid bombings of 2004 — and the reasons why knowledge and expertise can exaggerate these errors.

Part 2 presents solutions to these problems by introducing the new discipline of 'evidence-based wisdom' (EBW), which outlines those other thinking dispositions and cognitive abilities crucial for good reasoning. It offers some practical techniques to cultivate EBW. We discover why our intuitions often fail and the ways we can correct those errors to fine-tune our instincts. We explore strategies to avoid falling for misinformation and fake news so that we can be sure that our choices are based on solid evidence rather than wishful thinking.

Part 3 turns to the science of learning and memory. Despite their brain power, intelligent people sometimes struggle to learn well, reaching a plateau in their abilities that fails to reflect their potential. EBW can help to break that vicious cycle by offering three rules for deep learning — rules that explain why East Asian education systems are so successful.

Part 4 explores the reasons why talented groups can act stupidly — from the failings of the England football team to the crises of huge organisations like BP, Nokia, and NASA.

There is a section on intuitive-based diagnostic errors by doctors, and how simple rational measures can reduce the rate of error. However, diagnostic errors take up only a few pages — this is a book that explores individuals and organisations from all areas of society.

The Intelligence Trap may help us not only make better decisions about patients, but also in our personal lives. It could be useful in our teaching by inspiring students to improve their thinking and learning skills. However, beyond being useful, I just found this book fascinating.

'Life is short, and the Art long; the occasion fleeting; experience fallacious; and judgement difficult.' (Hippocrates).

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