

BMJ

Safety and the flying doctor

Francesco P Cappuccio and Steven W Lockley

BMJ 2008;336:218-
doi:10.1136/bmj.39468.659051.59

Updated information and services can be found at:
<http://bmj.com/cgi/content/full/336/7637/218>

These include:

Rapid responses

You can respond to this article at:
<http://bmj.com/cgi/eletter-submit/336/7637/218>

Email alerting service

Receive free email alerts when new articles cite this article - sign up in the box at the top left of the article

Notes

To order reprints follow the "Request Permissions" link in the navigation box

To subscribe to *BMJ* go to:
<http://resources.bmj.com/bmj/subscribers>

VIEWS & REVIEWS

Safety and the flying doctor

PERSONAL VIEW **Francesco P Cappuccio, Steven W Lockley**

Interest, curiosity, or dismay—which feeling predominates when we learn from BBC *Newsnight* that our NHS employs doctors who commute from Poland to cover the out of hours duties that local GPs are unable to work because they are too tired at night? Is it interest in an innovative solution for modern pan-European healthcare provision, curiosity in discovering huge variations in the standard of living across the medical profession in an open Europe, or dismay that the government's emphasis, that healthcare practice should be based on the best scientific evidence, is little more than lip service?

Working continuously for a long time, particularly at night, increases the risk of making errors and causing injury, which is why many professions limit the number of hours of continuous duty. These risks also apply to the medical profession: tired doctors make mistakes that harm patients (*N Engl J Med* 2004;351:1838-48) and themselves (*N Engl J Med* 2005;352:125-34) because of fatigue, attentional failures, and ensuing reduced performance (*N Engl J Med* 2004;351:1829-37). Seventeen hours without sleep reduces performance to the level of someone with a blood alcohol concentration of 0.05%, while performance after being awake for 24 hours is equivalent to being legally drunk (0.10% blood alcohol concentration). With this level of alcohol induced impairment, we are not legally allowed to drive or practise medicine and are considered a danger to the public. Although Polish general practitioner Dr Robinski, who featured in the *Newsnight* programme, did not work for 24 hours without sleep, his schedule as reported was certainly punishing. Dr Robinski is said to have woken at 4 am in Poznan to embark at 5 am on a four hour drive to Wroclaw airport, where he took a two and a half hour flight to Glasgow. He then drove to Aberdeen, where he arrived four hours later, having been awake for nearly 12 hours. After a one hour break, when Dr Robinski had a shower and a hamburger, he was "ready" to see his first patient at 6 pm, 15 hours after waking. By the end of this

shift he had been awake for over 19 hours. After finishing work late that evening, Dr Robinski had a night's sleep. The next day he considered himself fit to work nine hours in frontline care, despite admitting that his schedule is "a marathon."

What is the message here? It is inevitable that performance is degraded by such long work hours. The combination of acute and chronic sleep deprivation inherent in such schedules rapidly multiplies the risk of a fatigue related error—especially for tasks that are highly learned or "second nature" such as driving, selecting a drug dose, or giving an injection. Moreover, sleep deprived individuals are unable to rate their own levels of sleepiness accurately and often underestimate the deterioration in their performance (*Sleep* 2003;26:117-26). Patients would have every right to be concerned about being cared for by doctors who have been awake for 19 hours straight. While the onus is placed on the individual doctor to be fit for

Patients would have every right to be concerned about being cared for by doctors who have been awake for 19 hours straight

duty, it is disingenuous for an employing authority to claim it is only responsible for the doctor once he or she starts the shift, knowing full well that they have employed a doctor who requires a 12 hour commute to get to work. Governance has moral dimensions. By turning a blind eye to the extended commute required by this quick fix solution, individual doctors and their employers must lay themselves open to medical malpractice claims.

Throughout the 20th century, doctors—and junior doctors in particular—have been made to work marathon shifts, arranged in impossible rotas. The European Commission has targeted the problem of working practices that are unsafe for both patients and doctors, gradually reducing doctors' work hours. Its working time directive will limit junior doctors to a 48 hour week and 13 hours of continuous duty from August 2008. This

directive applies to all EU countries, but only Sweden, Denmark, the Netherlands, and the UK currently comply. While Europe-wide work hours do contribute to the total number allowed, commuting time is not counted. Laudably, the UK medical profession has embraced the issue of junior doctors' work hours. The Department of Health's New Deal improved the working conditions of junior doctors, and the Royal College of Physicians has developed guidelines to minimise sleep debt and fatigue in junior doctors (*Clin Med* 2006;6:61-7). The NHS workforce has also committed considerable resources to pilot studies to assess the implications of the imminent enforcement of the European working time directive on junior doctors' performance (www.healthcareworkforce.nhs.uk/working_time_directive/pilot_projects). These hard-won efforts to protect patients from the damaging effects of fatigue are now being reversed by the unsafe working practices that result from importing even more fatigued doctors from overseas.

It is the number of hours awake, not the number of hours of work, that increases fatigue related risk, and there is an institutional duty of care to consider whether doctors can be rested adequately under conditions that, while self imposed, predictably degrade their performance. We must develop working practices that protect patients from sleepy doctors, and sleepy doctors from themselves, and apply these standards equally across the EU as a whole, as was the intent of the working time directive.

Francesco P Cappuccio (f.p.cappuccio@warwick.ac.uk) is Cephalon chair of cardiovascular medicine and epidemiology, Clinical Sciences Research Institute, Warwick Medical School, UK, and Steven W Lockley is assistant professor of medicine, Division of Sleep Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA.

This article is the work of the Sleep, Health & Society Programme at the University of Warwick (co-led by Ed Peile) and the NHS Workforce Collaborative Project between Warwick Medical School, the Harvard Work Hours Health and Safety Group, and the Royal College of Physicians (represented by Roy Pounder).



“Probably the most influential of all medical works”
Vesalius's *Fabrica*, p 221

REVIEW OF THE WEEK

No hard feelings

Being shy or sad may not feel good, but it is often normal behaviour, and medical treatment may do people a grave disservice, **Margaret McCartney** finds in two new books

What is a “normal” emotion? Are we “allowed” to experience variations in our mood, or have sorrowful reactions to adverse events, without it meaning that we have a “disorder?” Is there such a thing as an ideal personality, or ideal ways to “cope” with an external event such that it does not impact on our feelings? Is there such a thing as a perfect mood? And if there is, is it up to doctors to decide what it should be composed of, and to encourage the use of all methods in our means to achieve it?

These books ask profound questions, and serve as a wake-up call. Psychiatrists in general, and the architects of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* in particular, stand accused of ignoring normal variations of personality and mood and the contexts in which they occur. In doing so, say the authors, we have harmfully categorised large portions of the normal population as diseased.

The Loss of Sadness, written by two professors of sociology, is meticulous and timely. Horwitz and Wakefield describe how the *DSM* fails to contextualise the symptoms that suggest depression. Because of this, they argue, the normal reactions to life stresses such as relationship break-ups or job losses are unaccounted for, and the resultant effects on individuals are to be diagnosed as a psychiatric disorder. A normal reaction to events often resolves naturally, they say. Only an ongoing, disproportionate, and therefore disordered response to such hazards is pathological, they continue—and their unemotive, orderly, and thoroughly referenced confrontation with *DSM*'s failure to account for the hazards of real life and their normal effects on people means that it is almost impossible to disagree with them.

Horwitz and Wakefield provide a history of depression from descriptions by Hippocrates and Aristotle onwards. There is no doubt that depression is a real illness, but numerous questionnaire surveys over the past couple of decades purport to show that large chunks of the population are depressed. The authors show that the questionnaire is an inexact method, reliant on untrained administrators, which fails to engage in any explanatory narrative. The resultant high “detection” results usually lead to doctors being scolded for not being “aware” enough of such symptoms and sent away to actively find and treat more cases. But are these large sections of society really suffering from a true disorder? No, the authors

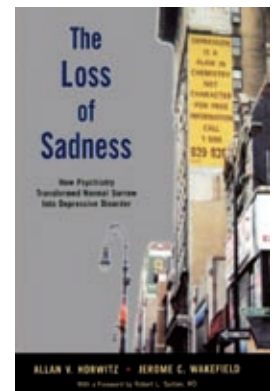
say; believing that they are results in a trivialisation of true depression, which is relatively uncommon, and skews the ability of research and resources to improve the treatment of true depression.

How can doctors have encouraged such a disregard for individuals and their life events in an eagerness to make a diagnosis? The obvious culprit is a drug industry that is keen to provide pharmacological “solutions.” Lane, in *Shyness*, shows how shyness—a normal type of personality—became, thanks to blurred distinctions in *DSM*, a muddled diagnosis, “social anxiety disorder”—true social phobia is much rarer. He protests that we should consider and embrace more psychoanalytic explanations of mental health problems—but without evidence for this being effective or useful, we are liable to fall into the same traps of eminence based medicine that *DSM* has already set for us.

Diagnosis is meant, at least in part, to guide towards useful treatment. When does a trait such as shyness become a disorder requiring a diagnosis? Shyness is normal, but of course “normal” is not always good for us. Can we really say that diagnosing and offering drug treatment for symptoms of shyness, or all symptoms of depression, is more likely to do people good than harm? On current evidence, we cannot. Indeed, as Horwitz and Wakefield say, a period where sadness is the response to a loss may actually protect and benefit us. There is no question that sorrowful people merit sympathy and compassion, but they are not, as a group, all likely to benefit from being labelled as having depression. Similarly with shyness. As Lane says, in the rush to diagnose a pharmacologically “treatable” condition of social anxiety disorder, we might do a grave disservice to all: “Our culture might even ask whether gregarious and loquacious behaviour is always more admirable than careful introspection, attentive listening, and scrupulous observation.”

The irony is striking. All these qualities are also undervalued in the modern doctor-patient relationship. The listening and observing essentials are missed by design as the overzealous case finding of depression by questionnaire has now filtered into the GP contract. Cookbook medicine by *DSM* is not just dispiriting; it is depersonalising and deprofessionalising.

Margaret McCartney is a general practitioner, Glasgow, and columnist for *Financial Times Weekend* margaret@margaretmccartney.com



Loss of Sadness

Allan V Horwitz, Jerome C Wakefield

Oxford University Press,
£17.99, pp 312

ISBN 978 0195313048

Rating: ★★★★★



Shyness: How Normal Behaviour Became a Sickness

Christopher Lane

Yale University Press,
£18.99, pp 263

ISBN 978 0 300 12446 0

Rating: ★★★★★

Goodbye and thanks

FROM THE
FRONTLINE
Des Spence



After dominating the planet for aeons, the dinosaurs became extinct almost overnight. Full time doctors are likewise dying out in their droves. Their bodies can be found floating in swimming pools across Europe, sipping gin and tonics, and laughing about their index linked pensions.

It is the end of general practitioners working nine clinical sessions a week, Saturday mornings, and covering out of hours, and the end of consultants on one in three rotas, working the next day, seeing multiple outpatients, and trailing round the wards afterwards. What we have instead are administration sessions, study sessions, shift work, and a multitude of part time contracts. The death of old fashioned, all-the-time doctors is virtually complete.

Why the demise? The reason is simple—doctors demand and expect a better work-life balance. There are other factors too, including a rise in medical graduate numbers, better pay (doctors are often in high-rolling professional couples), and changes in European legislation. More part time and reduced clinical contact is clearly in

the best interest of doctors. Arguably, these changes are in the best interest of patients, as they consult doctors with more balanced lives; they have also helped retain highly qualified staff in the NHS. These changes are all for the good and there is no going back.

But what are the trade-offs? Less clinical work equates to less experience, which mere education cannot replace. However, it is the erosion of continuity of care that is the most serious issue. Understanding someone's health-seeking patient behaviour allows a general practitioner to make a valued judgment about the likelihood of illness and to offer reassurance rather than investigation, referral, or admission. Leaky gatekeeping could allow the NHS to get swamped. Likewise, in hospitals, experienced consultants are the only ones capable of pulling the plug on the escalator of investigation and internal referrals.

Debate and action are long overdue, for the last few dinosaurs have already begun the slow walk to the swimming pool.

Des Spence is a general practitioner, Glasgow destwo@yahoo.co.uk

All together now

PAST CARING
Wendy Moore



COLIN CRISFORD

In celebrating the 60th anniversary of the World Health Organization this year, it is humbling to reflect that for most of human history international cooperation has been notable by its absence.

Early races and cultures were more likely to persecute each other as the perceived carriers of lethal diseases than to join forces in mutual opposition. The Mongols pioneered germ warfare when they catapulted plague-ridden corpses into the besieged Black Sea port of Caffa in 1347, thereby launching the Black Death on its devastating sweep through Europe. When syphilis was first observed in 1495, each successive nation of sufferers named the scourge after their closest enemies, so that the French called it "the Neapolitan sickness," the Italians "the French sickness," and the British "the French pox."

The contempt of cholera for the niceties of border control finally brought countries together in the first serious attempt at international partnership in 1851 when 12 nations, mostly European, met in Paris for the first International

Sanitary Conference (ISC). It was an inauspicious start.

Each country brought two delegates—a physician and a diplomat—but as both were allowed a free vote their views often cancelled each other out. It mattered little, since neither doctors nor diplomats had any idea of the nature of cholera or its method of transmission.

The British medical delegate insisted that cholera was "purely epidemic"—or subject to local environmental and climate conditions. An Austrian member argued that cholera was a divine punishment so that the only effective weapons were courage and faith. The Turkish delegate turned up 10 weeks late and demanded an adjournment to catch up on his reading. A seven-strong committee charged with debating quarantine controls concluded that it was "humanly impossible to do anything useful or efficacious against such a scourge" and that quarantine measures were therefore "illusory" and "even dangerous." This view was overturned by the full

conference, which voted for limited border controls. When the summit ended after a full six months, the French foreign minister commended its delegates for their speedy deliberations, but since none of the countries implemented the agreed measures its end effect was zero.

There were nine more international sanitary conferences that century, of which only one produced any useful decisions. By the time of the 14th and final ISC in 1938, there were three distinct organisations competing to provide an international forum on health: the Office International d'Hygiène Publique, the Pan-American Sanitary Bureau, and the Health Organisation of the League of Nations. The outbreak of the second world war put paid to the rival altruism, which led ultimately—and somewhat perversely—to the creation of a single global partnership for health with the founding of the WHO on 7 April 1948.

Wendy Moore is a freelance writer and author wendymoore@ntworld.com

Sources are on bmj.com

A decline in crime

What is the most characteristic British institution? The National Health Service, perhaps? No: it is the charity shop.

In no country in the world are there so many charity shops as in Great Britain. Is it because the British are so charitable? I leave it to others, more learned in political economy than I, to decide why we should have so many charity shops; suffice it to say that I rarely pass such a shop without glancing at the books for sale in them, for often, among the ranks of trashy paperback novels, is one book worth having.

Last week, for example, I went into a charity shop—one of many—in a dismal little town in Gloucestershire (also one of many) and found *Camps on Crime*, by the late Professor Francis E Camps, published in 1973.

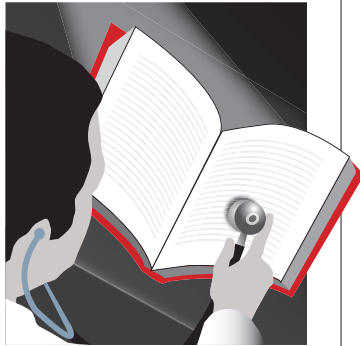
It was a bargain, marked down (said the label) from £2 to £1. Were there people, I wondered, who would not buy it at the higher price, but would buy it at the lower? Anyway, I, if not the charity shop, was in luck.

A pencil drawing of Professor Camps adorned the cover: avuncular, smiling gently, drawing on his pipe—it once would have connoted mature wisdom, but would now connote a disregard of the safety of others.

Camps belonged to what might be called the heroic age of forensic pathology when (perhaps because crime itself was less widespread as a pastime) forensic pathologists like Sir Bernard Spilsbury and Sir Sydney Smith were popular heroes. Camps was in apostolic succession to them, as it were, and like them was universally regarded by the public as a final court of appeal in matters of forensic pathology.

Murders in those days seemed so much more interesting—refined is per-

BETWEEN
THE LINES
Theodore Dalrymple



Murders in those days seemed so much more interesting—refined is perhaps not the word I seek—than those in ours

haps not the word I seek—than those in ours. They seemed somehow to be so much more characteristically British than they do now, taking place as they did in seedy boarding houses and along country lanes. Of course, George Orwell pointed out the decline of the English murder a long time ago.

I decided to buy the book when, quite apart from its reduced price, I noticed an essay in it entitled “The Mummy of Rhyl.” The combination of ancient Egypt and North Wales was

quite irresistible.

I am glad to say that something of the old boarding house culture, in places like Colwyn Bay, persists along the north coast of Wales. The mummy of Rhyl was found in 1960 in a cupboard at number 35 West Kimmel Street, whose owner had for many years “taken in paying guests.” I think the atmosphere is extremely well conveyed by the following description: “As the body was adherent to a piece of linoleum which covered the cupboard floor boards, a garden spade was used to lever it on the linoleum out of the cupboard and the position of the linoleum in relation to it was noted before they were separated with some difficulty.”

Camps in this case was acting for the defence, and it could not be proved that the mummy, a paying guest since 1940, had not died of natural causes. However, the landlady, a Mrs Harvey, pleaded guilty to obtaining £2 a week for 20 years from the Clerk to the Justices of Prestatyn (who paid the mummy’s pension) by pretending that the mummy was alive.

Even benefit fraud in those days seemed somehow more characterful.

Theodore Dalrymple is a writer and retired doctor

MEDICAL CLASSICS

Fabrica By Andreas Vesalius

Published 1543

In the early 16th century anatomy became an increasingly important component of a doctor’s learning. The Renaissance brought with it an influx of newly translated Galenic texts (including large anatomical guides), and these helped to enhance this fashionable area of study. There also emerged an emphasis on physicians doing dissection themselves. The foremost exponent of this approach was Andreas Vesalius.

Born in Brussels in 1514, Vesalius studied medicine in Paris, where he was educated in the teachings of Galen, before being appointed to a lectureship in surgery and anatomy at Padua. He was 23 years old. In 1540 Vesalius used Renaissance ideas surrounding anatomy to begin work on his definitive treatise. The result, in 1543, was *De humani corporis fabrica* (*On the Workings of the Human Body*, or “the *Fabrica*”), which the *Oxford Medical Companion* describes as “probably the most influential of all medical works.”

Before the *Fabrica* there had for some time been a dearth of accurate anatomical illustration. The standard procedure was for anatomists to employ artists to do illustrations under their instruction. Invariably the anatomists would guide their depiction in the vein of traditional images rather than direct observation, thereby retaining longstanding inaccuracies.

Three factors can be seen as accounting for the *Fabrica*’s outstanding anatomical content: Vesalius’s brilliant technical skill with the scalpel, his insistence on using as evidence only that which he had observed, and his copious knowledge of the Galenic corpus. Hence it can be appreciated that the *Fabrica*, when published, set the standard in anatomical illustration. The quality of the book’s artwork is such that it has, arguably, received more attention than the textual content. Not only are the drawings highly accurate, they also evince an outstanding level of artistic skill—the artist is thought to have been a pupil of Titian.

Of central importance is Vesalius’s treatment of Galenic anatomy. Although much of the content of the *Fabrica* remains true to Galen, Vesalius was also keen to highlight the inaccuracies and shortcomings of the Greek physician. Galen had used animals, often apes, as his subjects, and as a result there were several errors, for example in the depiction of the heart’s chambers, that Vesalius looked to rectify.

Reaction to the publication of the *Fabrica* could have been easily predicted. Vesalius would have known the controversy that his book’s attack on Galen would cause and, most likely, would have welcomed it in the knowledge that it would add to his publicity. The text was groundbreaking in its anatomical content, and its innovative illustrations and modes of presentation were also novel. Ultimately the *Fabrica* helped to advance the career of Vesalius—he became household physician to Emperor Charles V.

John Beard, GP trainee and MSc student in history of science, technology, and medicine johnbeard@doctors.org.uk

