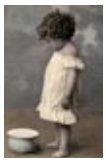
The Faeces of Children and Adults, p 721



Google needs better control of its advertisements

PERSONAL VIEW **Marco Masoni, Maria Renza Guelfi, Gian Franco Gensini**

Searching for information is one of the most popular uses of the internet, and medical information is among the types of information that are most sought. Therefore how internet search engines present sources of information to users is important. As the internet is not well policed and regulated, it is up to members of the medical community to be vigilant and to suggest improvements.

Google, the most popular internet search engine, earns much of its revenue from advertisements related to search terms entered into it. We have noticed that Google's sponsored links are sometimes to web pages that contain worrying medical claims. On 19 January 2009 we used Google Italia to search on the keyword "aloe." On the first page of results two sponsored links appeared at the top of the page. The first one said (in Italian): "Aloe vera or arborescens? http://www.aziendaagricolaghignone.it. To purify use aloe [*Aloe vera*], but in chemotherapy it must be arborescens [*Aloe arborescens*]."

Visiting this website, we found the following statement: "The most important use of Aloe arborescens is as an adjuvant treatment with chemotherapy: it is recommended for preparation as a traditional therapy or when other therapies give no results. Aloe is also recommended as a prevention strategy for people predisposed to this type of pathology." From the same website you can buy a litre of "Aloe Arborescens Superior," a mixture of extracts from three species of Aloe, for €130 (£120; $170).

The linked site has further pages full of statements and "proofs" aiming to show that *Aloe arborescens* can cure many types of cancer

AdWords (http://adwords.google.com) is "Google's flagship advertising product" and was its "main source of revenue in 2007" (http://en.wikipedia.org/wiki/AdWords). The software is used by those who want to display advertisements on Google and on its advertising network. Through it users can create advertisements, choose their own key words, and decide which Google queries their advertisements should match. Google decides on placement on its pages of search results: which advertisements to show and in what order.

Surfers beware

But Google's automated matching to search terms sometimes places inappropriate advertisements. For example Google Guide (which is neither affiliated with nor endorsed by Google), says: "In September of 2003, adjacent to a *New York Post* article about a gruesome murder in which the victim's body parts were stashed in a suitcase, Google listed an ad for suitcases. Since that incident, Google has improved its filters and automatically pulls ads from pages with disturbing content" (www.googleguide.com/ads.html).

We think that Google's filters must be improved further. Showing an advertisement that links aloe and cancer in response to a query with only the single keyword "aloe" is inappropriate. Worse yet is when the website linked to has false medical claims. If improving the filter is too complex, it would be better simply not to display sponsored links in results of searches on medical terms or products.

Adjacent to a *New York Post* article about a gruesome murder in which the victim's body parts were stashed in a suitcase, Google listed an ad for suitcases

But there's a further problem. Appearing immediately under the sponsored links in our search was a short list of "related searches." Such suggested alternative search terms, which don't appear on every search in Google, are automatically generated by an algorithm determining terms related to the search that may be useful to refine the query. In our case, the related link "Padre romano zago" connected us to a website (http://aloearborescens.tripod.com/) that contains statements such as: "Cancer can be cured! Padre Romano Zago's cure, Aloe Arborescens, cured many people's cancer!" The site has further pages full of statements and "proofs" aiming to show that *Aloe arborescens* can cure many types of cancer.

Google has often said that it wishes to enter the healthcare arena in many ways. We think that a necessary first step for Google is to improve its filters and algorithms so as to prevent possible harm to its users.

Marco Masoni and Maria Renza Guelfi are researchers, Faculty of Medicine, University of Florence
m.masoni@med.unifi.it
Gian Franco Gensini is dean, Department of Critical and Surgical Care, University of Florence

Editorial note: In the past, bmj.com has carried advertisements on its pages provided through Google's AdWords service, but this was discontinued after complaints from readers about inappropriate matches between editorial content and advertisements.

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A reformation for our times

PERSONAL VIEW **Joanne Shaw**

We are experiencing a healthcare reformation. Traditional paternalistic relationships between patients and doctors are being undermined in much the same way as the religious Reformation of the 16th century empowered the laity and threatened the 1000 year old hierarchy of the Catholic church in Europe. The Reformation had irreversible consequences for Western society; the implications of the healthcare reformation could also be profound.

Before Martin Luther it was the custom for everyone in Catholic Europe to attend church at least weekly. Although church going was an essential part of everyday life, lay people could not participate in services in any meaningful way. Services were held in Latin, not the local language. Bibles were objects of great beauty, hand written by highly skilled craftsmen in monasteries, enormously expensive—and only available in Latin. Nearly all copies of the Bible remained in the hands of monks and priests.

An educated priesthood was seen as essential to explain the meaning of the Bible to ordinary people, who could not be trusted to interpret it for themselves. Indeed, it was believed that if lay people were to have direct access to the word of God, misunderstanding and misinterpretation would lead to dire consequences, potentially placing their immortal souls in jeopardy. Years of training as a priest were required to understand and explain the text correctly. Letting the general public loose on such material was positively dangerous.

This dominant paradigm was overturned by a combination of radical thinking and new technology: the printing press. In the 16th century vernacular Bibles began to be printed in great numbers, first in German and then, largely thanks to William Tyndale, in English. Initially printed on the Continent, copies were smuggled into England through rapidly developing international trade routes. Thus the Bible became accessible to ordinary people, at the same time as more people were learning to read as a requirement of technical occupations such as ship building. In England the first reaction was suppression. Copies of Tyndale's Bible were bought up and destroyed by agents of the crown, and Tyndale himself was burned at the stake for heresy. But later the established church embraced the idea of public accessibility, and every church provided a copy of the Bible for the congregation to read. .

In our age, the "bible" is medical information, the technology is the internet, and the priests are the medical profession. The internet has brought the canon of medical knowledge—previously accessible only in expensive textbooks, subscription journals, and libraries—into the hands and homes of ordinary people. Searching online for medical and health information is normal behaviour (www.pewinternet.org/pdfs/EPatients_Chronic_Conditions_2007.pdf), and using Google to find diagnoses is now commonplace. This phenomenon was documented in a widely quoted *BMJ* paper (2006;333:1143-5) and further explored in a more recent *Times* article, "Google was my doctor" (www.timesonline.co.uk/tol/life_and_style/health/article5369960.ece).

Many doctors regard such trends as highly threatening and react to them with outright horror or with resignation, as a necessary evil. The first letter published in response to the *BMJ* paper exemplifies the fear and loathing felt by many medics, describing the use of Google as a diagnostic tool as "laughable and bordering on dangerous" (www.bmj.com/cgi/eletters/333/7579/1143#148937).

Such responses carry echoes of the arguments of the clergy in the Reformation.

With the internet, is medicine going through its Lutheran transformation?

In our age, the "bible" is medical information, the technology is the internet, and the priests are the medical profession

Patients should not look for medical information on the internet because much is of dubious origin and quality, and they are not equipped to tell the difference between good and bad. Patients who rely on medical information from the internet, especially that emanating from overseas, will be misled and put themselves at risk. Patients who confront their doctors with "evidence" from the internet waste doctors' time and implicitly challenge their authority.

Readers may recoil at equating medical science with religion (although in certain areas of medicine, where definitive evidence is lacking, different schools of thought exhibit many of the characteristics of religious believers: allergy may be one example, thyroid disease another (www.onmedica.com/BlogView.aspx?blogId=9183e08b-e64b-402c-a05f-47fd7f1736ff&postId=b83ef721-b6f0-4da7-a172-579a5b4806e5)).

Although the reformation analogy is clearly imperfect, it can be instructive. Not only is the demand for online health information unstoppable, it should be welcomed and encouraged as good for patients and doctors alike. We need people to be more prepared to take responsibility for their own health, work out what may be wrong with them, and research how best to care for themselves. Many minor ailments can be safely and cost effectively managed in this way.

It is true that the internet may be a further source of alarm for the worried well, but equally it encourages early presentation and action that could improve survival and reduce complications. The internet does not diminish the role of doctors but casts them as expert advisers rather than authoritarian figures with exclusive guardianship of special knowledge. Many doctors already act according to those principles, and many patients will continue to want a more traditional style of relationship with their doctors. But people who look to the internet as a legitimate tool to help them with their health may already be in the majority, and this is something for us to celebrate.

Joanne Shaw is chair, NHS Direct NHS Trust
joanne.shaw@healthstrategy.org

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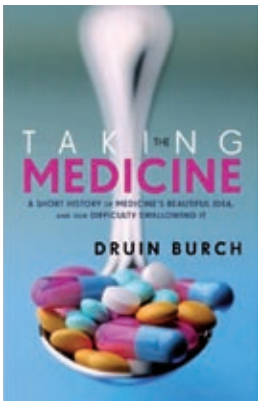
MARTIN LUTHER BY LUCAS CRANACH THE ELDER

REVIEW OF THE WEEK

Take this with a pinch of salt

An account of the lack of evidence behind many of the renowned discoveries of medical science, and indeed for their effectiveness, is reviewed by **Robert Bud**



Taking the Medicine: A Short History of Medicine's Beautiful Idea, and Our Difficulty Swallowing it

Druin Burch

Chatto & Windus, £20, pp 330

ISBN 978-0701182786

Rating: ★★☆☆

This sceptical history of medicine and drugs is both serious in intent and entertaining in delivery. It is also provocative, unbalanced in its choice of examples, and occasionally inaccurate. The serious message is lurking throughout but is only expressed near the end: "The moral is not that doctors once did foolish things. The moral is that even the best of people let themselves down when they rely on untested theories, and that these failures kill people and stain history."

Most of the rest of the book is made up of well told stories chosen to persuade the reader of the truth of this conclusion. These stories are best read as a myth cycle—not in the sense of myth as untruth but as interpretations of often well known events, with meaning and a moral for the present.

The message that many drugs have been used without evidence is an important one. And indeed there has in the past been great scepticism about the value of drugs. It is but a couple of generations since doctors were referring to the problematic benefits of "the quasi-scientific blunderbuss of modern prophylaxis and therapy."

Many of the familiar stories from the history of pharmacology are to be found here. The tales of the discovery of quinine, aspirin and sulphonamides, penicillin and thalidomide are all told with zest, and the book has a few less well known facts too. Burch, a hospital doctor in Oxford, also focuses at length on the life of Archie Cochrane. He tells with brio the story of Cochrane standing up to the German commandant of a prisoner of war camp, to tell him in fluent high German that his behaviour was not worthy of the country of Robert Koch and the discovery of sulphonamides. In this case, the book moves elegantly from the story of the past to Cochrane's obsession with testing even in the camp and on to his postwar work.

The moral is not that doctors once did foolish things. The moral is that even the best of people let themselves down when they rely on untested theories

In general, Burch's ability to convince through the power of his own arguments is patchy. In some cases there is a care in interpretation, as in his story of James Lind. He is quite right in his scepticism towards Lind's interpretation of what later became the classic tale of testing the effect of lemon juice on scurvy—though even there an irritation with a man "who had no real understanding of what he was doing" shows through.

In other cases, however, the telling of the stories seems to overpower the reader rather than convince, and Burch lacks precision in recounting what happened. The author puts Bayer's delay in launching Prontosil, the first sulphonamide, down possibly to concerns over patenting. He would have been better heeding the published research of John Lesch on the complex context of early Nazi Germany.

In his account of penicillin, Burch puts great emphasis on the survival of one US patient, Anne Miller, and deals not at all with the elaborate tests carried out on wounded servicemen in the United Kingdom and in the United States. He concludes that penicillin had "a significant effect on wartime casualties" without providing any evidence and without reflecting on the elaborate postwar analysis of the military's experience.

Of course, such an account as this cannot be encyclopaedic—though, given public concern about the safety of vaccines, it might have been useful to deal, say, with the testing of a vaccine for pertussis in the 1950s. In places I suspected that an omission was not due to lack of space but reflected a lack of that fastidiousness demanded here of doctors. Stories that do not seem to support the argument are simply ignored. So Burch does not explore the import of the folk use of cod liver oil during the 19th century, following the 18th century observations of Thomas Percival and later vindicated by Edward Mellanby's work on vitamins, but which was never the subject of rigorous testing.

Taking the Medicine is provocative in the clarity of the distinction between drugs working and not working. In reflecting on Roy Porter's *The Greatest Benefit to Mankind*, he wonders rhetorically why Porter should talk of Western medicine "working" (in quotation marks). I was reminded of the complex meaning this word has in normal life. As the physician Robert Hamm and colleagues remarked in 1996: "Patients always say they want antibiotics because they 'work.' Work to do what? If you ask, you'll learn what your real task is. For many patients, the 'work' is to prevent pneumonia; for others, the 'work' is to get them back on the job. For a few, it is to cure the disease they are afraid they have and are convinced you are missing" (*J Okla State Medical Assoc* 1996;89:267-74).

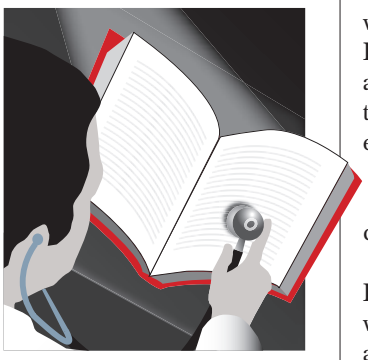
The author of this book wastes no time on such ambiguities.

Robert Bud is principal curator of medicine, Science Museum, London r.bud@ntlworld.com

Cite this as: *BMJ* 2009;338:b1098

Inside stories

BETWEEN THE LINES
Theodore Dalrymple



Can anyone conceive of reading a contemporary official report with pleasure in its literary qualities?

Progress, it goes without saying, is not entirely uniform. Indeed, retrogression sometimes occurs, for example in the style of official prose. Where now it employs neologisms, euphemisms, and acronyms to the point of incomprehensibility, it was once clear, vigorous, and even a model for aspiring writers. Of course, in those days its authors were not so ashamed of what they did that they had to disguise it by the use of opaque language; barbarous locutions conceal a bad conscience.

Can anyone conceive of reading a contemporary official report with pleasure in its literary qualities? Recently I read the *Report of the Commissioners Appointed to Inquire into the Condition and Treatment of the Prisoners Confined in Birmingham Borough Prison, and the Conduct, Management and Discipline of the Said Prison*, published in 1854, not only with interest but in pleasure at the vigour of the prose, written by the three commissioners, one of whom, William Baly, was a doctor.

The inquiry was set up when a 15 year old boy committed suicide, and rumours of hideous mistreatment of prisoners became persistent. The governor, Lieutenant William Austin, RN, was a ferocious disciplinarian who introduced such innovations as the crank for hard labour (to be turned by the prisoner 10 000 times a day, or else he would be given only bread and water) and a special punishment jacket, a straitjacket with the addition of a leather hoop for the refractory prisoner's neck that was stapled to the wall.

The report was particularly damning of the prison's medical officer, Mr J H Blount. Its conclusion about him was unequivocal: he practised "with little regard to common decency, to say nothing of the humanity which should be exercised in a Christian country." Even the evidence that he gave to the commissioners was criticised: "We are bound also to express our opinion, with respect both to Lieut[enant] Ustin and to Mr Blount, that much of their evidence was given in an evasive, disingenuous and discreditable manner."

Among Mr Blount's methods was the use of salt as a tranquilliser:

"In July 1852, a prisoner of the name of Samuel Hunt, who there is great reason to believe laboured under partial insanity, having been violent, and struck or threatened to strike a warder, was by order of the governor put into a strait jacket by two of the prison officers. While they were putting it on him he was in a very excited state, resisted, endeavoured to bite, shouted, and made use of obscene language. The governor and surgeon were present. The latter directed that salt should be sent for. Salt was brought, and the surgeon, in the governor's presence, whenever the prisoner opened his mouth to shout or to bite, thrust into it a quantity of salt, repeating the proceeding until the prisoner was subdued, and became quiet."

Mr Blount believed that most epileptics were faking it and had buckets of cold water poured over them to prove it. One of them treated in this fashion died the same night of what sounds like status epilepticus.

I was reminded of my early days working in a prison. I had entered the cell of a prisoner in the company of an officer, supposedly also a nurse, when the prisoner fell to the floor in a grand mal seizure.

"Don't you do that in front of the doctor!" said the officer to the convulsing patient.

Theodore Dalrymple is a writer and retired doctor

Cite this as: *BMJ* 2009;338:b1128

MEDICAL CLASSICS

The Faeces of Children and Adults

By Percy John Cammidge

First published in 1914

In 1914 Percy J Cammidge of London published his unsung opus, *The Faeces of Children and Adults*. He was commissioned by John Wright & Sons, a Bristol publisher that went on to publish the *British Journal of Surgery*, to write a translation of a German work on the subject. On "mature consideration," however, Cammidge deemed the German work inadequate and resolved to undertake a work of far wider scope.

Empirical observation is a cornerstone of basic science. Cammidge arranged for samples to be sent from all over the world: "When the specimen has to be sent a long distance, especially in hot weather, it may be preserved by mixing it with a little formaldehyde. I have obtained satisfactory results from specimens from India, America and Australia." He insisted, however, that his specimens must not be contaminated with urine.

Having obtained his material Cammidge performed macroscopic inspection, microscopic examination, and bacteriological and chemical analysis. His descriptions were richly detailed and evocative. In constipation "smaller masses, having a faceted surface, and resembling the dejecta of sheep, are sometimes seen." He described how the oral administration of calomel turns the stools green, senna or gamboges turns them yellow, kino colours them red, haematoxylin violet, while methylene blue imparts "a bluish-green tint."

Cammidge aimed to deduce the process of digestion

ROGER VIOLLET COLLECTION/GETTY IMAGES

Much of the book is given over to lengthy details of his chemical methods and descriptions of his microscopic observations, but he also commented at length on diet: "The copious drinking of water with meals should not be practised indiscriminately and certain pathological conditions would be a distinct contraindication"; "It may be stated as a fact that [alcoholic drinks] should be avoided by all persons under the age of thirty years, except in pathological conditions." Condiments and spices "are most useful in the aged and feeble," but "an abuse of such substances gives rise to catarrh of the stomach and causes hyperaemia of the liver." As a purgative Cammidge recommends "semi-solid paraffin," given "between bread as a sandwich."

One of Cammidge's aims was to deduce the processes of digestion by examining faeces in the context of a known diet. Unluckily for him, advances in physiology soon rendered his work obsolete, but his book still merits the historian's attention and deserves wider recognition for its scope and detail. Spare a thought for Cammidge, toiling in his laboratory amid his rainbow coloured but odoriferous trophies, contemplating his unappetising lunch. His dissertation is a comprehensive masterpiece of analytical methods, rigorously applied.

Aidan M O'Donnell, consultant anaesthetist, St John's Hospital, Livingston, West Lothian **aidanmark@doctors.org.uk**

Cite this as: *BMJ* 2009;338:b984

The slippery slope

FROM THE FRONTLINE
Des Spence

I looked down the glacier. "It's too steep." "Don't be such a baby!" she retorted. She turned and skied off, pretending to suck her thumb. I closed my eyes and pushed off. In the distance my wife pretended to rock a child in her arms. But then whoosh, I went faster and faster and then exploded into a snow drift. Blood trickled from my mouth. Two Germans returned my skis and with Teutonic diplomacy rebuked me for being on the slope. Whose fault is the scar in my mouth?

Prescribing is like skiing: so easy to start but hard to stop. It gathers pace with age and ever more risk modification. All clinics initiate their own mindless, evidence based, standard cocktail. And with the rise and rise of absolutism in medicine, those things once euphemistically called "guidelines" are now a plethora of prescribing flowcharts, vice-like in their rigidity. So, modern medicine hurtles headlong down the hill of polypharmacy—but what waits at the bottom?

The problem is not the cost of treatment. Nor is it that drugs are so often used in a low risk population, where, like a toxic actuarial banking derivative, they have a completely unknown value. The real deal is adverse drug reactions. Besides the high proportion of hospital admissions related to medication, it has been suggested that twice as many people die from adverse drug reactions as die on our roads. With polypharmacy now seeming to be official NHS policy, and with a population that is ageing (and thus more sensitive to the adverse effects of drugs), these problems are surely set to grow.

There is no stopping once we have started down the prescribing slope. The psychology of fear and blame means that doctors are unwilling "to take the chance" and halt the descent. Likewise, patients are reassured by the false comfort of drug treatment and are conditioned into taking drugs for life, even sometimes believing that they may die suddenly should they miss a dose.

We need more lessons on prescribing: knowing when to start, recognising the shakiness of the supposed evidence base, and understanding the balance of risks and benefits, because often the most important intervention is knowing how and when to stop. Otherwise, when the inevitable crash comes, I know who will be to blame.

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

Cite this as: *BMJ* 2009;338:b1119

Peninsular derring do

PAST CARING
Wendy Moore

COLIN CRISFORD

The sheer derring do of the early 19th century army surgeon George Guthrie (1785-1856) seems culled straight from the pages of a *Boy's Own* story. Apprenticed to a surgeon at the age of 13, Guthrie passed his College of Surgeons examination at 15 and, having lied about his age, promptly enrolled as a surgical assistant in the British army bound for Canada. Returning home in 1807, Guthrie averted disaster when he spied the English coast fast approaching and single handedly piloted the ship to safety.

The following year he landed in Portugal with British troops, under the command of the future Duke of Wellington, to take on the might of Napoleon's army at the start of the peninsular war. Within days he found himself in the midst of his first battle, at Roliça, where he laboured to save life and limb during "three days of unending toil." After four days' rest, Guthrie was busy again, at the battle of Vimeiro, treating British and French casualties in filthy conditions and under fire, despite receiving wounds in both legs, which he dismissed as a mere graze and a bruise.

The next year at Talavera, in Spain, Guthrie was given charge of the entire army's medical service and became responsible for 6000 wounded; and at Albuhera, in 1811, he operated in torrential rain for 18 hours at a stretch on 3000 casualties without his assistant, who had been killed in the battle.

In lulls between fighting, the tireless Guthrie dashed off articles to medical journals and—already fluent in French and Spanish—mastered Portuguese. Once separated from his troops, he captured a French cannon unaided; and later, surrounded by enemy soldiers, he was saved from certain death when recognised, in classic comic book fashion, by a French officer he had previously treated.

Guthrie lambasted his superiors for inadequate medical provision. Surgical assistants were treated worse than "any costermonger's donkey," while a staff surgeon had to "brush his shoes, clean his own horse, and then go out to do many of the most delicate operations in surgery," he complained in his life story, the somewhat blandly entitled *Compound Fractures of the Extremities.*

Nevertheless, when the peninsular wars ended he bemoaned the lost opportunity for "another battle" to decide "two or three points" in surgery. That chance came at Waterloo when Guthrie, now retired, dashed to Brussels under his own steam to supervise casualties and perform a pioneering amputation at the hip. His work on battlefield surgery, which he sent free to all regiments, became the standard textbook for 50 years.

Ultimately Guthrie's humanitarianism outshone his heroism. Having saved countless lives of ordinary soldiers, his last letter was an appeal to the minister for war to find a home for a wounded veteran.

Wendy Moore is a freelance writer and author, London wendymoore@ntlworld.com

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Sources for this article are available on bmj.com