

How alternative is alternative medicine?



Mavericks of Medicine: Conversations on the Frontiers of Medicine

David Jay Brown

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Reviewed by Bruno J Strasser

If you are interested in living longer and improving your sexual performance, *Mavericks of Medicine* may be the book for you. David Jay Brown presents 22 breezy interviews with unconventional biomedical thinkers, including leading figures in alternative medicine. Some of the personalities interviewed are renowned scientists, whereas others are better known for their popular books and diets. In answer to Brown's questions, mostly about aging and sex, they discuss the virtues of omega-3, coenzyme Q-10, stem cells and other products found, or soon to be found, in vitamin and supplements shops. They present various biological theories of aging, and reflections about the American health system in general and the US Food and Drug Administration (FDA) in particular. As such, this book offers a valuable look at alternative medicine and an opportunity to reflect on its enduring popularity.

Brown is the author of three similar books and two science fiction novels. In *Mavericks of Medicine*, he asks questions in the same critical spirit as the PR officer of a company preparing a press release with his or her CEO: for example, "Could you talk a little bit about some of the beneficial effects your patients have had with carnosine supplements?"

Thus, readers may dismiss at the outset any expectations that Brown might confront some of the glaring contradictions between these different diets, or challenge the wildest assertions of his subjects. Not that he should have done so to avoid any legal trouble, since the book contains a disclaimer that the author and the publisher shall have "neither liability or responsibility to any person [for] damage caused."

Brown's writing style is repetitive ("he was ridiculed by his medical colleagues who thought the idea ridiculous") and his editing minimal. References to the papers mentioned by the interviewees to support their views are almost never given, perhaps because "the scientific literature in this country is entirely controlled." Instead, Brown provides the addresses of the authors' websites for those in search of an independent opinion. To enlighten the reader further, Brown offers

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a glossary defining peptides as "chemical messengers" and vitamins as compounds "which can not be synthesized by the body." He also makes clear that great minds inhabit almost exclusively male bodies (21 interviewees out of 22).

Brown's rationale for focusing on this particular set of individuals is that "all scientific and medical progress" has originated from "maverick thinkers." This common view of history is either trivially right or factually wrong. If "maverick" designates anyone who comes up with a new theory, it is trivially true, as progress entails novelty. If "maverick" refers to people considered to be 'quacks' it is factually wrong: William Harvey and Galileo were no more 'regarded as quacks' in their time than James Watson and David Baltimore are in ours. Furthermore, Brown seems to think that being considered wrong today increases your chances of being considered right tomorrow. This logic is hard to follow.

However, this book must be valuable. After all, the back cover blurbs include strong endorsement by two individuals who praise this "wonderful" book and the "intelligent" viewpoints it contains — including their own, since they are interviewed in the book.

Some of the scientists interviewed offer more interesting, if controversial, insights. Cell biologist Leonard Hayflick, for example, who developed the first normal human diploid cell line, presents reasonable arguments about the cellular aging process. He makes a good case for putting more emphasis on studying the aging process itself, rather than the diseases that generally occur in late age.

A number of the interviewees are highly critical, and rightly so, of possible conflicts of interest at the FDA and of the pharmaceutical industry's greed. But they fail to mention, and David Jay Brown is too shy to ask, if they themselves have any financial interest in the supplements they advocate. The 'add to cart' buttons decorating their websites suggest that their conflicts of interest are blatant, as they sell the supplements that they recommend, supposedly based on their "research."

The high price of prescription drugs, the emotional detachment of some doctors and the lack of a universal health care system in the US are also criticized several times in the book. These problems serve as good reminders that as consumers become increasingly disillusioned with orthodox medicine, many of them find alternative medicine more palatable. There is certainly much room for improvement in the FDA's independence, in the doctor-patient relationship, in the pharmaceutical industry's pricing strategies and in medicine's exaggeratedly optimistic promises of magic bullets.

Unfortunately, most of the proponents of alternative therapies in this book actually constitute a caricature of the most questionable aspects of contemporary medicine. Their reliance on simplistic models of biological processes, their blind faith in wonder pills, their vested interests in their own drugs and their constant pressure to consume more of them can hardly be considered an 'alternative' to mainstream medicine. As radical as they try to appear, they strongly contribute to the ongoing medicalization of modern life — by stimulating anxieties about sex, aging and intelligence, and by promoting the constant consumption of drugs as the answer.

COMPETING INTERESTS STATEMENT

The author declares no competing financial interests.

SIVmac when SIVmac production is suboptimal. SIVmac became more sensitive to the late restriction when lower concentrations of SIVmac proviral plasmid were co-transfected with a rhesus TRIM5 α -expressing plasmid in 293T cells (Fig. 1e). Intriguingly, western blot analysis showed that wild-type SIVmac production altered the TRIM5 α expression pattern (Fig. 1f). Under conditions where SIVmac titers were not strongly affected by rhesus TRIM5 α , SIVmac production appeared to reduce the abundance of rhesus TRIM5 α in producer cells (Fig. 1f). Although further experiments are needed, these observations suggest that SIVmac can resist this restriction by saturating or counteracting the TRIM5 α late restriction machinery. This may not be surprising, given that many viruses are known to counteract another antiviral factor, TRIM19 (refs. 7,8).

In conclusion, our data, comprising the results of numerous experiments conducted under optimized conditions, strongly support the biological significance of the rhesus TRIM5 α -mediated late restriction.

Further investigation of the mechanisms may provide important new leads in the fight against HIV-1.

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The validity of alternative medicine

To the editor:

In Bruno J. Strasser's review¹ of my book *Mavericks of Medicine*, it appears that Strasser is doing the very thing that he is accusing me of doing—not presenting a scientifically objective viewpoint.

Strasser criticizes me for not including references that support the medical claims made by the controversial researchers that I interviewed, although references are rarely given in interview collections that are primarily intended for a lay audience, and part of the intention of my book was to use scientifically informed speculation about the future as a way to help provoke creative thought.

Strasser also criticizes some of my interviewees as having “blind faith in wonder pills” and for being associated with web sites that sell these products and claim their health benefits. For example, Internet sites that host articles by biochemist Barry Sears about the benefits of omega-3 fatty acid supplementation and by neurochemist Joseph Knoll about a drug that he developed called deprenyl also sell omega-3 fatty acid supplements and deprenyl. Although these products are not the primary focus of my book, some of them are discussed, and they are generally being promoted by my interviewees not because of “blind faith” in the products, but because they are well-studied nutritional supplements, or

drugs that have undergone clinical trials.

Sears' claim, for example, that omega-3 fatty acid supplements can have significant anti-inflammatory effects is supported by research², and studies have also confirmed Knoll's assertion that the selective MAO-B inhibitor that he developed—deprenyl—can significantly improve cognitive performance in some individuals.³

If space allowed, I could verify virtually all of the assertions made by the interviewees in my collection. However, as my book points out, scientific evidence may be ignored by mainstream medicine if it doesn't easily fit into conventional paradigms. As a result, there is a commonly held belief that all of our mistakes about fringe science are historical, and that we're too sophisticated now to make those same mistakes today. In my book I explore the possibility that we may be repeating some of the same errors today that we've made throughout history.

David Jay Brown

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Strasser replies:

Brown has it exactly right: history can teach us important lessons. Unfortunately, he misreads the muse's clear instructions—for example, to remember that pill peddlers have historically been unconcerned with conflicts of interest, that they have made overreaching claims on the basis of limited studies while ignoring contradictory evidence, and that they have rarely hesitated to boast they have evidence about the efficacy of their remedies¹.

I do not see how this historical picture significantly differs from the health ‘information’ websites mentioned by Brown that sell drugs ‘just one click away’, from his claims of improved “cognitive performance in some individuals” without mentioning that the “individuals” in that study are rats², from his omissions of the studies that have come to the opposite conclusion in humans³ or from his claim that he could “verify virtually all of the assertions” made by “mavericks” (including assertions about a

mysterious “RNAutri switch”), but does not deliver when given a book-length opportunity to do so.

We may forgive Brown for withholding references from his lay audience, but not for failing to provide his audience with evidence. Without a description of the studies he mentions, it is impossible for Brown's readers to evaluate his book critically and make up their minds about whether they want to believe independent nonprofit organizations evaluating clinical evidence, such as the Cochrane Collaboration, or financially interested mavericks. Unlike the author cited by Brown, the Cochrane Collaboration, after reviewing 17 clinical trials of selegiline (l-deprenyl), concluded that there was “no evidence of benefit of selegiline for Alzheimer's disease”^{4,5}.

Brown is right again when he says that scientific claims that do not “easily fit into conventional paradigms” run the risk of being ignored. Of much greater consequence, however, is the risk that a drug whose effec-

tiveness and safety is poorly supported by scientific evidence, whether produced by alternative or orthodox medicine, becomes a product of mass consumption.

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Laboratory animals deserve better legal protection

To the editor:

Given that she is head of the National Association for Biomedical Research, Frankie Trull's professed concern for animal welfare in her interview¹ is disingenuous considering her organization's history of campaigning to ensure that rats, mice and birds be excluded from Animal Welfare Act (AWA) protections. The idea that these animals are not worthy of AWA coverage is unscientific and unethical. Rats and mice, in particular, continue to be exposed to such torments as inescapable

electric shocks and force-feedings. Are these really what anyone would consider "the most humane conditions"?

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Animal experiments "represent outdated science"

To the editor:

While griping about security measures at laboratories, Frankie Trull neglected to mention that 95% of all animals used for experimentation—mice and rats—are specifically excluded from the Animal Welfare Act, the only federal law covering animals in US laboratories. Mice and rats have no protection at all under federal law. Meanwhile, the laboratory committees that by law are supposed to oversee all studies involving animals and prevent redundant experiments are failing dismally at their jobs.

In my personal opinion, Trull's role as apologist for anything and

everything experimenters do to animals is an anachronism given the burgeoning field of non-animal research. Forward-thinking scientists are ready to admit that experiments on animals often represent outdated science and that such experiments are always unethical.

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