

for the poor or destined for unregulated countries could just as easily slip into higher grade products. In Africa, where some manufacturers shipped their lowest-quality drugs, doctors would often prescribe much more than the typical dose so as to achieve the desired effect.

What then should India do? Firstly, regulation of companies manufacturing drugs should markedly improve as should drug testing. India should also consider instituting unannounced inspections with competent investigators. Maintaining high standards is not expensive relative to the cost of drugs and the cost of ineffective treatment. What about those who knowingly produce inferior products for local consumption or

export? If a person dies or is disabled from taking drugs that were purposefully adulterated or produced with no active ingredient, what punishment should be given to those who are responsible? Penalties should fit the crime, and those found guilty be held accountable beyond simply paying a fine, or having no punishment at all.

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Love in the dream drugstore

DAVID HEALY

Brian Earp, Julian Savulescu, *Love is the drug: The chemical future of our relationships*. Manchester University Press, 265 pages, £17.99, ISBN 9781526145413

It's difficult to resist a book with a title like this. You might expect it to mention Viagra and related drugs - nope. As far as chemicals go, this is an MDMA (Ecstasy) love-in, with a whiff of other psychedelics, and a smidgeon of oxytocin thrown in. MDMA here is not just a chemical - it's a trauma repair kit - helping foundering relationships by undoing trauma. We know this because MDMA has been used to treat PTSD, and if it helps relationships this must be what it's doing. This, and the linkage between oxytocin and bonding between mothers and infants, frames these chemical interventions as meaningful.

Building on a meaningful basis, precision-engineered chemicals are about to take us to an enhanced and progressive future. But before the Rapture, there are scenarios involving drugs to loosen attachments and reprogramme affections we should consider.

It's not clear how soon the authors think we will be transported into a new world. MDMA has been in regular use for half a century, and oxytocin has been billed as the relationship hormone for as long, without making any practical difference to our relationships so far.

It may be that a "cultural" template needed to change - that we needed to get comfortable with bio-hacking. Cognitive

enhancers, were an entry point into this with many Americans taking "smart drugs" in industrial quantities but no appreciable difference to their intelligence levels (1). Smart drugs were an early tributary to what has become a Wellness flood, worth billions annually in the US, which might provide a shop-window for making relationships great again with relationship modifiers.

No mention in this book that in some Western countries the ability to make love has been wiped out for 20% of the population by SSRI (selective serotonin reuptake inhibitors) antidepressants. No mention that SSRIs can trigger an enduring sexual dysfunction after treatment stops, leading young people to commit suicide. No mention of the growing numbers of asexuals, born to mothers who were on SSRIs in pregnancy (2).

There are cautionary notes about anecdotes telling of good effects with drugs like MDMA and the need to wait for substantive clinical trial evidence:

The ethics of prescribing drugs off-label is tricky. Sometimes the evidence concerning appropriate doses, benefits, and risks has changed since the manufacturer's label was finalized. If you're prescribing a drug for the purpose it was originally intended for, in a way that is consistent with the best available evidence, and the evidence just happens to have changed since the label was printed, hardly anyone would seriously object (p 133).

This is a road to a marketing of relationship modifiers aimed at fostering a permanent discontent that will lead to company profits rather than good relationships.

The authors also overlook the cabbage problem. Cabbages produce 47 different pesticides, many of which would not get on the market if attempts were made to license them, but they are what give cabbage its flavour (3).

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Like the pesticides in cabbages, testosterone and oestrogen, to stick with chemicals people think they know something about, are the same poisons. Given as supplements to men, testosterone can cause significant problems. The same is true of oestrogen, which in low-dose contraceptive form can cause suicidality and dependence in women. Teenage girls are now taking testosterone, and even nastier gonadotropin release factors to become “men” with often alarming and irreversible effects, while men take oestrogens thinking these will magically make them female.

All hormones can cause dramatically bad effects, sometimes just the opposite to the effects that happen “naturally”. What “naturally” means in this sentence is that biological systems are more complex and “wise” than chemical systems. There are pheromones in our skin and elsewhere that play a part in shaping attraction, for the ancient biological machinery function (as the authors put it) of procreation, but taking something that has developed in a functional system and using it willy-nilly, commonly doesn’t work out as expected. The same is true of all drugs, many of which will have diametrically opposite effects in you and me. In addition, our hormones and other bodily settings are “naturally” shaped by the settings of others in our social group. Biologically, there is no such thing as an individual.

The young people now blithely consuming cross-sex hormones and puberty blockers do so in response to identity drivers. The authors embrace our striving for the right identity as a bedrock for our authenticity. This puts them in the paradoxical position of decrying the ancient biological machinery that stands in our way of getting there, while promoting a bunch of chemicals as somehow having the smarts to help us on our way.

Their chemicals are sacraments – interventions from which only good can come – rather than the poisons used in medicine which necessarily harm and ideally should only be used to counterbalance the greater harms some condition poses. Sure, a relationship may be something worth taking risks for – women take risks the whole time with contraceptives but there is no consideration of risk here. Just magic – efficacy without risks.

The belief in rational engineering is married to a belief in rational evaluation that takes ecclesiastical form in the shape of the Cochrane organisation, based in Oxford from where the authors come. The core Cochrane belief is that randomised controlled trials (RCTs) deliver gold standard evidence about drugs (4).

In practice, putting chemicals through RCTs makes the risks these chemicals offer in the real world vanish. Every chemical has a 100 or more effects on the body, but RCTs are only designed to look at one effect of some commercial or other interest. Putting SSRIs in RCTs aimed at gaining a license to treat “depression” made for an intense focus on an infrequently emerging, barely perceptible, positive clinical effect from which companies could earn a fortune while investigators missed a host of more common effects, especially the immediate genital

numbing these drugs produce in almost all takers. Huge swathes of the population are now not making love because of this.

RCTs are the standard through which industry makes gold and the gold standard way to hide adverse events (5). But aside from a brief mention of disease mongering as a marker for these issues, the problems are not considered and the deeper epistemological problems of RCTs, the operationalism they are an instance of, are not touched upon. Readers are reassured that any less than rational quirks in the system have been recognised, and the scurvy knaves who work in Pharma, who might briefly have slipped out of control, are once again clapped in irons and we can get back to indulging in romance.

There is an engineering going on, but it is not a manipulation of chemicals, receptors or biological systems – it’s an engineering of information. Control of the masses depends on selling the idea that the information coming out of RCTs trumps individual judgement. This is not on the radar for the authors who suspect individual judgement and note that:

In the debate about chemical enhancement... on one side are “bioconservatives,” who tend to be resistant to technological changes that will significantly affect the human condition... “Bioliberals” are on the other side, and they tend to be more open to technological change... (p 145).

The engineers of human souls working in pharma marketing will lick their lips, thinking about how to nudge *Love is the drug* to best-seller status. What could better help the relationship modification market than bioethical endorsement that comes with the message that experts are working on any issues that might have once held people back.

Toward the end, the authors turn to possible coercive uses of love drugs. Sitting side by side with a plea that love drugs not be used to convert young homosexuals, is an advocacy for giving people who identify as transgender access to all options to manipulate their bodies in their efforts at identification.

This may have been written before the eruption into public awareness of an increasingly extensive use of puberty-blockers in pre or early teenage children aimed at facilitating their later transition to biological and psychological states never ever seen before. The current advocacy of this use of chemicals in this age group is cult-like in the adherence to identity purity and a liberal use of terms like “transphobic” that it mandates.

These matters straddle a fault-line in the book. Can chemicals induce a similar “authenticity” to whatever “authenticity” stems from our struggle with life and its issues? Does the idea that thinking changes our chemicals as much as chemicals change our chemicals eliminate the basis for distinguishing between one road to enlightenment over the other? What does identity have to do with authenticity – much previous thinking about enlightenment from either a religious or progressive perspective would likely have seen our present focus on identity as more in line with self-branding than with authenticity. Is accommodating to our ancient biological

machinery silly, or mature?

There is little chemical and no biological detail in this book. This lack of detail produces a screen on which the authors project a set of fantasies, many of which are of interest and worth considering, but what actually happens will likely be quite different to what is imagined here.

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Ethics and the vaccine wars

DONALD W LIGHT

Peter C Gotzsche, *Vaccines: truth, lies and controversy*, People's Press, 2020, 201 pgs, ISBN: 9788770368933, Kindle: Rs 1,426.

In his controversial but well-prepared style, Peter Gotzsche has jumped into what feels like the vaccine wars between the “vaccine advocates” who think that every vaccine should be taken by everyone as a vital part of preserving the public’s health and the “vaccine deniers,” who are characterised as believing vaccines are a dangerous kind of poison that government officials want to inject into the bodies of babes. Readers will find the book informative, interesting, and clear about what the real issues are. Gotzsche has a readable, informal style that students and readers will enjoy. He is a tough-minded sceptic who has been professionally involved in most of the chapters. Gotzsche is a physician and professor of clinical research design and analysis in trials, in Denmark. He is the author of many books and articles on health policy, often critical of the pharmaceutical industry for its bias, misinformation, and lack of transparency. He previously authored *Deadly medicines and organized crime: How Big Pharma has corrupted healthcare*, about drug companies “where cheating with clinical trials and in marketing is common and has led to hundreds of thousands of deaths.” I wrote a review of this carefully researched book.

Vaccines consists of five substantial chapters on the conflicting messages about vaccines, vaccines for measles, mandatory vaccines, influenza vaccines, and controversies around HPV vaccine, in all of which ethical issues abound. They are followed by four brief chapters on Japanese encephalitis,

childhood vaccination programmes, and other vaccines, with a short three-page conclusion. The text runs into 187 pages of large type, followed by 23 pages of references. There is no table of contents or index, no preface or introduction. The chapters are well organised with good section heads.

All vaccines have risks and possible harms, Gotzsche writes. The question is whether a given vaccine is more beneficial, as many are. “It is unwise and unscientific to be universally against vaccines,” he writes. “It is like being against all drugs or all people.” The vaccine wars, however, mark all doubting or hesitating parents as “anti-vaxxers” and lump them together with the tiny percent of the population who oppose any vaccine. This cuts off intelligent conversation or consideration of those who have concerns about the industry-controlled trials and industry-produced evidence overseen by the Food and Drug Administration (FDA) or the European Medicines Agency (EMA), which are themselves funded by companies to review their evidence. Children get swept up in these battles so that unvaccinated children are now called “anti-vaccinated” children. Politicians get celebrated or vilified for raising questions about a given vaccine.

This battlefield is worth keeping in mind, because according to the vaccine policy center at New York University (1), there are 270 more vaccines in the pipeline! Imagine that 10 percent of these 270 vaccine-candidates get approved as “safe and effective.” Parents and other adults will be faced with 37-45 vaccines, more than double the number now. Currently, 10-18 vaccines are mandatory for infants and small children, depending on the country. But some countries, like the UK and Denmark, have no mandated vaccines, and a comparative study found no clear link between vaccine mandate and uptake. Vaccine culture varies a lot, led by an emphasis in the US. on mandating vaccines and by the Centers for Disease Control (CDC), which serves as an industry-funded spokesperson for the industry’s point of view.

Driving the sprawling research enterprise that is developing 270 new vaccines is a massive pharmaceutical industry and the high prices that patented vaccines now frequently command. Prices 50 times manufacturing costs are not uncommon.

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