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Serotonin or society?

ESSAY

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It is by no means certain that neuroscience will be the rescuer of psychiatry. The discipline will probably benefit from also keeping open other perspectives on how human experiences lead to problems and malfunctioning.

8 February. Thursday morning, standard routine: Breakfast, coffee, latest news from the journals. They write in the *New England Journal of Medicine* that prazosin does not help with post-traumatic stress disorder (1). Did they honestly believe that an α_1-antagonist would help veterans get over their experiences on the battlefield? In *JAMA Psychiatry Online First* they report that substance use disorders, in fact all mental illnesses, are brain disorders (2). I check the White House website. They have removed the article on The BRAIN Initiative, a twelve-year research programme intended to revolutionise our understanding of the brain. I find it in the archives from the presidential period of Barack Obama (3). It says there, white on blue, that both depression and post-traumatic stress disorder are brain disorders. So it's true, then?

Illustration photo: Science Photo Library/NTB Scanpix

While journals, researchers and commentators maintain that mental problems are best understood as expressions of brain dysfunction (4), and that the best way to correct these dysfunctions is pharmacologically, the protests from lay people and organisations are growing. Patient associations (5), individuals who have recovered from serious mental problems (6) and even UN spokesmen (7) ask us to look at mental disorders from perspectives other than medical.

The biological theories are disliked, but even more, perhaps, their wrath is due to feeling that mental problems have been decontextualised. People relate that their problems have been perceived as expressions of pathology, and have not been viewed against the background of the experiences that caused them (8). Critics of the prevailing biomedical paradigm often combine zealous criticism of traditional research with uncritical acceptance of alternative studies (9). The criticism may be liberating and useful, but one is often left convinced. In this essay, I discuss the most recent book in this genre.

Lost connections

One of the critical voices is the English journalist Johann Hari, who recently published the book *Lost connections* (10). There is no false modesty about the subtitle: *Uncovering the real causes of depression – and the unexpected solutions*. The book is partly a review of the scientific basis for various views on depression, partly a self-help book. The cover bears warm recommendations from Emma Thompson, Brian Eno and Elton John. This is not primarily an academic work.

Hari was distraught as a result of a foundered romance when he was 18 years old. The doctor spent less than ten minutes explaining that Hari was suffering from depression, a brain disorder due to a serotonin deficiency. The doctor did not ask why Hari was unhappy or about the events in his life, but wrote a prescription for paroxetine, which Hari used for 14 years. He stopped because his therapist pointed out that he was just as depressed while

taking the antidepressant.

Illustration: Jayesh/iStock

Hari asked himself two questions: Why am I depressed, even though I am taking an antidepressant? And why do so many people feel depressed these days? Is there something other than an imbalance in brain chemistry at the bottom of it? Hari looked into the matter, partly by reading, and partly be talking to researchers in the social sciences, psychology and psychiatry. It is impossible to gain a full overview of the research in this field, but Hari made a valiant attempt. The book is driven by his indignation at being fooled into believing in an explanation that doesn't hold water.

Serotonin deficiency?

The crux of Hari's argument is that the serotonin deficiency hypothesis is untenable, but he rejects rather than discusses it. Hari is not very familiar with the research on biological depression, nor can the people he contacts help him much in this respect. The book would have benefited from Hari finding more credible spokespeople for the biological paradigm.

His conclusion is that antidepressants are usually inadequate for treating depression. Other measures are needed – and other explanations for the problems. Hari does not believe that research on the brain will bring about a breakthrough: " You couldn't figure out the plot of Breaking Bad by dismantling your TV set. In the same way, you can't figure out the root of your pain by dismantling your brain" (p. 145).

Hari believes that the causes of depressions are primarily social. His message is very well summed up in the quote from philosopher and author Jiddu Krishnamurti (1895–1986): "It is no measure of health to be well adjusted to a sick society."

If depression is a deficiency disease, Hari does not believe it is serotonin that is lacking. Rather, what is missing is a sense of meaning, belonging and fellowship. People suffer from not having meaningful work and a secure future, and economic and social differences among people lead to poor mental health. Powerlessness and lack of meaning make one unhappy.

The ties between people are fewer and weaker than before. The remedy is to build fellowships that are mutual and meaningful for all concerned. Just as people live on junk food instead of real food, he maintains that they live on junk values rather than real ones. Wherever we turn, we hear the monotonous message that consumption, status and

individualism are what make us happy. Individualism and a life disconnected from nature and from a functioning collective make us susceptible to depression. He perceives his own desire for a private solution to depression as a symptom of the very mentality that caused it all.

Remedies

While Hari sometimes generalises and draws overly categorical conclusions in his criticism of antidepressants and other individual treatments, he is balanced and restrained with respect to the potential consequences a social interpretation of depression will have for its treatment. He advocates socially oriented interventions that link patients closer to networks that create meaning and fellowship, promote important values and increase contact with nature and other people.

Individual job support is one measure in line with this thinking. Work proves to have multifarious and wide-reaching effects on function and quality of life, above all with respect to symptoms of depression (11).

"Befriending" is a method developed in the UK for offering emotional support, often under the aegis of the voluntary sector. Meta-analyses point to moderate effects on depression (12). There are also studies suggesting that measures such as problem-solving and bibliotherapy are effective (13).

Grief exclusion

In the American diagnostic manual DSM-III, grief was not defined as a mental disorder, even in the case of a fully developed depressive syndrome. The exclusion meant that the 'depression' syndrome should sometimes be regarded as a normal reaction to the loss of a loved one. But other stresses can also trigger a depressive syndrome. The exclusion of grief is inconsistent and reveals the difficulty of distinguishing between normality and mental disorders.

When the exclusion of grief was eliminated in DSM-5, which was published in 2013, it created intense debate. The decision was defended by psychiatrist Kenneth S. Kendler, a member of the DSM-5 task force, who wrote that "Either the grief exclusion criterion needs to be eliminated, or [it should be] extended so that no depression that arises in the setting of adversity would be diagnosable" (14). The elimination of the grief exclusion made DSM-5 consistent, at the cost of grief becoming a mental disorder. Hari's view is that depression is often a normal reaction. But nowadays, he writes, we have stopped asking what makes us unhappy, and instead we try to block the neurotransmitters in the brain that enable us to feel it.

In the office, the latest edition of *Tidsskriftet* (the Journal of the Norwegian Medical Association) is lying in my pigeonhole. Psychiatrist Petter Andreas Ringen believes it is a question of time before new evidence from the neurosciences will be an aid in clinical work (15). They've been saying that for a hundred years. A patient comes in, wants to work with us. He believes we need different perspectives. "I know this life. I've been there myself, I know more than you about Norwegian social services' benefit schemes and where patients have to phone." He may be right; is it more knowledge based on experience – rather than neuroscience – that we need?

How do we understand depression?

The discussion as to whether the source of mental disorders is in the brain or in society has a long history. In *The myth of mental illness*, Thomas Szasz pointed out that a disease or disorder is due to defects or functional impairment (16). As soon as impairments or defects are detected, the diseases are by definition no longer mental disorders, but neurological, metabolic or genetic diseases, as the case may be. The assertion that mental disorders are a

myth is therefore a tautology, according to Szasz.

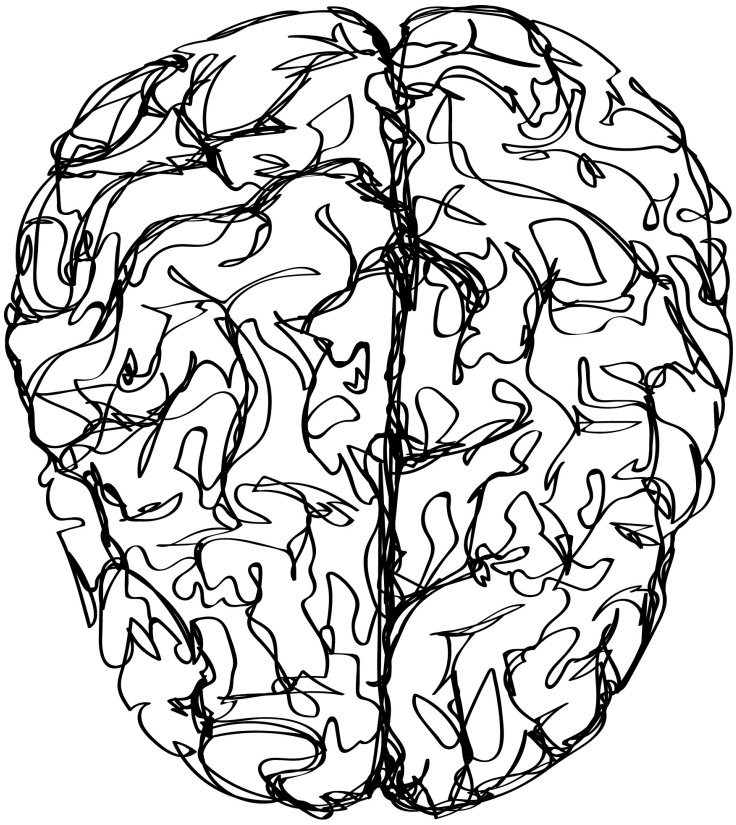
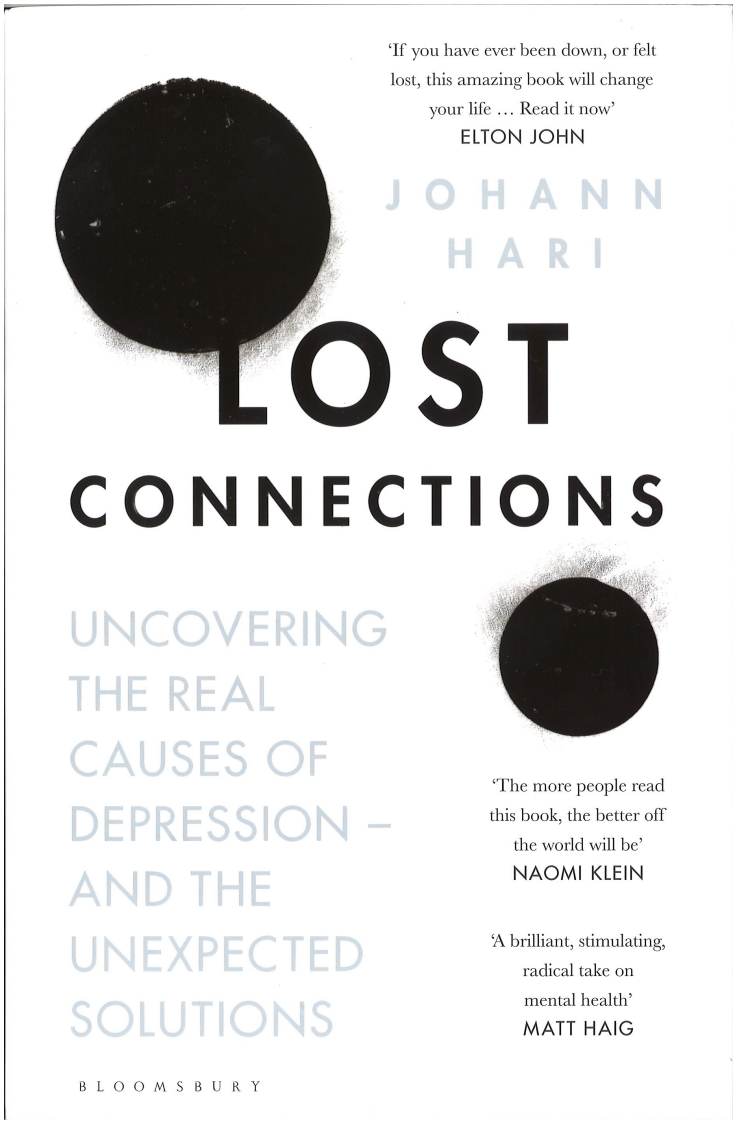


Illustration: The Journal of the Norwegian Medical Association

This does not prevent many researchers from firmly maintaining the belief that depression is to be understood as a brain disorder, but at the same time attaching weight to genetic and environmental factors. It is still argued that depression is due to serotonin deficiency, injury and inflammation, neurodegeneration and mitochondrial dysfunction (17).

Depression is studied at different analytical levels in biological, psychological and social theories. The fact that the brain is the source of all the mind's activity does not mean that research on the brain is always the most fruitful analytical level for understanding thoughts and experiences. In a one-sided biological approach, there is a risk of confusing cause and effect and individualising and biologising social problems. When unemployment and loneliness increase the prevalence of depression, it is not self-evident that these are matters for neurobiological studies.

No matter how much or how little biology there is in a depression, the context must be important. Depression seldom strikes in a vacuum. For example, Dalgard et al. demonstrated a dose-response relationship between stress and the occurrence of depression (18). If one is going to biologise mental problems, one must avoid an overgeneralisation that does not take account of what we all know: that our feelings are bound up with the life we live.



Topical book: Johann Hari. Lost connections. Uncovering the real causes of depression – and the unexpected solutions. London: Bloomsbury, 2018

Mental problems are classified without account being taken of *why* the person has the problems in question. The clinical treatment must start where the classification system leaves off, i.e. with an understanding of why this particular person has these problems. The critics are right in maintaining that neither diagnostics nor treatment can be context-free.

Between 2006 and 2013, the number of girls in Norway aged between 14 and 17 taking antidepressants increased by 70 % (19). This is difficult to reconcile with a purely biological interpretation of the problem. There must be something else driving developments.

A study by Einar Kringlen et al. showed that the prevalence of depression and other mental disorders is far lower in the county of Sogn og Fjordane than in Oslo (20). The authors believe that the difference in prevalence is due to social stability and closer ties among people in the former county. If they are right, measures that increase a sense of belonging, fellowship and trust among people must reduce the prevalence of depression.

Many people perceive depressive problems as a reaction to the conditions they live under. Many feel that they struggle with individual problems, and they prefer to understand their specific problems rather than to be told which abstract category they belong to.

Instead of diagnostics and psychotropic drugs, the critics of the biomedical paradigm want normalising approaches, socially oriented solutions, inclusion of those who are less fortunate and social activism. Above all, many want a less paternalistic psychiatry, and more equality between expert and patient. It would do Norwegian psychiatry no harm to listen to these ideas.

Home from the office, standard routine. Coffee and newspapers, back to the keyboard. Search on PubMed: "Depression + serotonin + hypothesis + review". The review articles firmly maintain the theory. The latest edition of *JAMA Psychiatry* drops into the Inbox: editorial from Oslo on the NMDA receptor-antagonist esketamine for treatment-refractory depression (21). The authors write that the disease mechanism may be related to the NMDA receptor. The same reasoning as those who launched the serotonin hypothesis. Are we going round in circles? I log out and finally read something on paper – Ivan Illich's classic from 1974. Of everything I have read today, he is undoubtedly the most correct – there is a nemesis pervading medicine (22), p. 919): "By transforming pain, illness and death from a personal challenge into a technical problem, medical practice expropriates the potential of people to deal with their human condition in an autonomous way and becomes the source of a new kind of un-health."

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