

**LSD: My Problem Child and Insights/Outlooks**

by Albert Hofmann, translated by Jonathan Ott. Oxford University Press and Beckley Foundation Press, New York, NY, 2013, 232 pages, \$39.95 (hardcover).

This fascinating book pairs an autobiography of and a collection of essays by Albert Hofmann (1905–2006), the chemist who first synthesized LSD in 1939, self-experimented with the drug, and had great hopes for its potential utility only to see LSD lead to both interesting and frightfully horrid effects. This book is at the level of interest of other autobiographies by great scientists, such as Eric Kandel's *In Search of Memory*.

Hofmann, a chemist working for Sandoz, was making important discoveries related to the drug ergot when he happened upon synthesizing LSD. His descriptions of how he did his research with a small team and explored purifying substances that had been thought to have medicinal value and developed related compounds is fascinating from the point of view of how pharmaceutical discoveries are made. When early experiments found no pharmaceutical utility for LSD in animals, the drug was shelved, and there was a good chance that LSD would be forever overlooked. However, in 1941, after developing several effective pharmaceuticals derived from ergot, Hofmann suspected that LSD might have therapeutic properties and made another batch. This time, extremely small quantities on his skin induced a full-blown LSD intoxication and his discovery of a powerful psychoactive drug. In some ways, *LSD* reads like *Dr Jekyll and Mr Hyde*, as Hofmann first self-experimented with the extremely potent hallucinogen LSD and led Sandoz to prepare a pharmaceutical product that was used widely for research.

Initially, the drug was hailed as a possible major tool for therapeutic enhancement of psychoanalytic study (just as Freud initially proclaimed cocaine a wonder drug, to his later regret), a probe into the mechanisms of mental function, and a possible means of better understanding perception, awareness, consciousness, and psychiatric states and diseases. Hofmann also had the belief that LSD might be useful to enhance creativity and spirituality for writers and artists and was a consumer advocate for experimentation. Bill Wilson, founder of Alcoholics Anonymous, self-experimented with LSD, which he thought might help treat alcoholics. Later, the dangers of LSD became apparent after it achieved mass use as an intoxicant and a cult drug made famous by prominent psychologists like Timothy Leary. In a nuclear age, a generation of flower children sought refuge by using drugs to escape the terrors of war and mass destruction. Reports of the dangers of psychotic and depressive reactions and suicides led to widespread laws against LSD and to a general reduction in research on LSD, especially after experiments by the US Army led to the suicide of Dr Frank Olson, who was given the drug without his knowledge, arousing great public reaction. Sandoz stopped production of the drug, and Hofmann had some regrets about the whole experience. Hofmann contrives an illusion

of objectivity as a pharmaceutical scientist looking at his work with both pride and great concern about the powers of LSD. However, his continued infectious enthusiasm for the possible benefits of LSD and “sacred plants” could lead to harmful self-experimentation by uncritical readers of this book. The book is replete with his and others' mostly positive personal experiments with a variety of hallucinogens and accounts of meetings with Timothy Leary, Ernst Jünger, and Aldous Huxley.

He argues in favor of continuing the search for clinical utility for LSD and of allowing continued study of the drug. In fact, recently, there has been a renewed interest in researching congeners of LSD that may have less dangerous effects and in uses of LSD and related compounds in the treatment of patients with posttraumatic stress disorder, terminally ill patients, and other populations. Readers may not be fully aware of the widespread great harm that LSD has caused, and most especially its dangers to the psychiatrically vulnerable. The recurring epidemics of harmful designer drug use in our culture are certainly of great public concern, and caution should remain, especially in regard to human experimentation. Recent trends toward liberalization of marijuana laws may also lead to unintended consequences including reduced public and youth awareness of the dangers of hallucinogenic drugs.

The LSD story described by Hofmann has all the earmarks of a pattern seen before with the pharmaceutical industry: overly initially excited about new products and eager for commercial gain, they facilitate research, try to find enthusiastic medical supporters, overly tout benefits, and do not fully evaluate all the risks of a new drug until many have become addicted to it and suffered great side effects. The risks of searching for performance-enhancing drugs without evaluating their dangers and harmful consequences should be of public concern.

Hofmann's *LSD* will be of high interest to a wide audience of curious and scientifically minded readers. Few books about how science unfolds are as captivating and intriguing as this volume. Just as nuclear energy can be harnessed for good or evil, drugs that alter brain chemistry can have powerful negative and positive effects. New powerful tools to better understand brain function will be developed over the next century. Hopefully, we may better understand why LSD has such profound effects on perception and brain function. Knowledge regarding brain function and genetics may generate personalized pharmaceuticals to effectively treat major mental illnesses. It will take the keen observation and genius of scientists like Hofmann to better explore these mysteries. However, I recommend that readers take everything Hofmann says about LSD with a grain of salt rather than with a sugar cube!

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