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THE SCIENTIFIC AND THERAPEUTIC POTENTIAL OF PSYCHEDELICS

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BIOGRAPHY

Professor David E. Nichols, Ph.D., is Professor of Medicinal Chemistry and Molecular Pharmacology at the Purdue University School of Pharmacy and Pharmaceutical Sciences in West Lafayette, Indiana. He is also an Adjunct Professor of Pharmacology and Toxicology at the Indiana University School of Medicine. His unique research spans a continuum, from computer-assisted drug design and chemical synthesis, to in vitro and animal pharmacology, giving him a very broad perspective on biomedical research that is quite unusual.

He has published more than 250 scientific papers and book chapters, is the holder of seven U.S. patents, and has been an invited speaker at numerous national and international symposia. His research has been continuously funded by the NIH for nearly three decades. He has served on numerous governmental study sections, advisory boards, and review panels, and serves as a consultant to the pharmaceutical industry. He was named a fellow of the American Pharmaceutical Association, a fellow of the American Association of Pharmaceutical Scientists, and was elected to membership in the American College of Neuropsychopharmacology. In 2004 he was named the Irwin H. Page Lecturer by the International Serotonin Club.

Professor Nichols has been studying hallucinogenic drugs since 1969, and is considered by many scientists to be the world's top authority on the chemistry and pharmacology of these substances. He is also the founding president of the Heffter Research Institute, a not-for-profit organization incorporated in 1993 to encourage and support rigorous scientific studies of the medical potential of psychedelic agents. In addition to his work on hallucinogens, he also has been a world leader in the research of novel dopamine D1 agonists to treat Parkinson's disease, and to treat the cognitive and memory deficits of schizophrenia. He was the scientific cofounder of a small biotech company to commercialize these therapeutic agents, which are now in Phase II clinical studies.

ABSTRACT

Many people seem to believe that psychedelic agents sprang on society in the early 1960s out of nowhere, and have been nothing but dangerous drugs ever since. The facts are quite to the contrary, however. These substances have a long and profound history in many different cultures. Perhaps the most notable, from a Western perspective, was their central role in the Eleusinian mysteries of ancient Greece. For nearly 2,000 years, this highly advanced society celebrated an annual ritual that involved drinking a beverage that most scholars now believe was a psychedelic of some kind. Every great Greek that one could name probably participated in this profound ceremony at least once in their lifetime. In other examples, the South American Aztecs employed mushrooms that were called "God's flesh" in both social and religious rituals, and the Native American Church incorporates the ingestion of a hallucinogenic cactus in their all night religious ceremonies.

How is it that substances that were utilized for visionary experience and spiritual renewal came to be viewed by modern societies as dangerous? The widespread popularity of psychedelics during the 1960s and 1970s certainly gave cause for concern, and restrictions on the availability of these substances to the general population were indeed warranted. But in fact, these restrictions went too far; the baby was thrown out with the bath. Clinical studies with these extremely interesting substances have been virtually nonexistent for the past fifty years. Even substances such as heroin and cocaine, which have profound abuse potential, are still the subjects of clinical studies to understand their effects in humans. Only hallucinogens remain nearly inaccessible, associated with an irrational taboo against their study. The reasons for this stigma are not entirely clear, but they do not arise from scientific findings. Indeed, hallucinogens are perhaps some of the least toxic drugs known.

One is forced to conclude that the restrictions can only be understood in a social and political context. Thus, we find that funding agencies presently are most interested in supporting research focused only on discovering dangers associated with the use of psychedelics. Yet, these substances may represent completely novel approaches to treating a variety of medical conditions. A few of the important areas where these drugs may find medical importance are the treatment of alcohol and substance abuse, the treatment of obsessive-compulsive disorder, and the pain and anxiety of dying. In addition, because of the profound nature of their effects, and the brain structures with which they interact, psychedelics may be invaluable tools to study consciousness and cognition. Studies have recently been published showing that hallucinogens have dramatic effects on visual processing, and brain imaging techniques are now being used to correlate drug-induced activity changes in different brain regions with subjective states. We need to re-examine our attitudes toward these substances, which may not be so different from the position taken by the Catholic Church toward Galileo and his telescope.