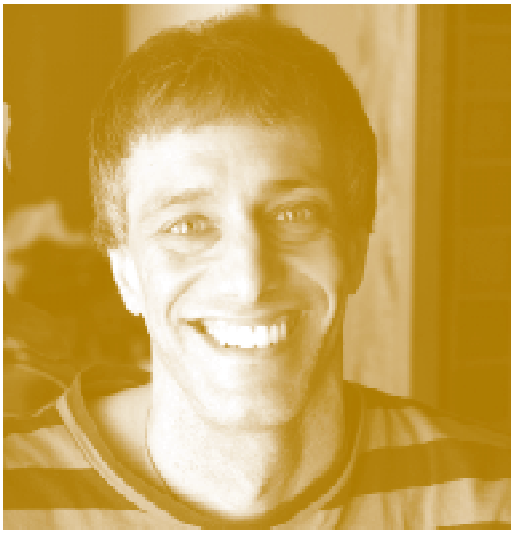
## Letter from the Editor:

# David Jay Brown, M.A.

More than a few people have pointed out how closely timed the discovery of LSD (April 16, 1943) was with the first controlled atomic reaction (December 2, 1942). Others point out the close timing of the discovery of mescaline (1897) and the development of X-ray photography (1895). Because of these near historical coincidences, it has been suggested that there might be some sort of relationship between the timing of these discoveries and the development of these inventions, as these powerful technologies seem to mirror the discovery of the psychedelics in an interesting way.

An LSD experience can be subjectively viewed as an "atomic explosion" or "nuclear meltdown" of the mind. Likewise, the penetrating perspective gleaned from a mescaline experience seems strangely similar to the see-through point of view provided by X-ray photography, as both have the ability to make normally invisible aspects of the world visible. A number of people—including Swiss chemist Albert Hofmann, who discovered LSD—have suggested that LSD might have been discovered in 1943 as a spiritual antidote to the apocalyptic dangers of nuclear weapons that now threaten the survival of our species.



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Whether these speculations are true or not, Western science's discovery of psychedelic chemicals lead to an intimate and unusually creative relationship with technology. Since psychedelics affect all aspects of the human mind, they affect every aspect of human culture. Science, art, medicine, politics, philosophy, and spirituality have all been transformed by individuals experienced with the psychedelic mind state, as has the major hallmark of our species' success—our ability to design tools. The interplay between technological innovation and psychedelic mind states has substantially influenced many aspects of electronic media and biotechnology—including the development of new film techniques and cinematic special effects, personal computers, the internet, and genetic engineering.

For example, the biotechnology revolution was largely started by two Nobel Prize biochemists—Francis Crick and Kary Mullis—who both reportedly attributed part of their insights to their use of LSD. Francis Crick, along with James Watson, discovered the double helix structure of the DNA molecule—the genetic code—and, according to a BBC report, sources close to Crick say that he was regularly using low-doses of LSD at the time of the discovery. Kary Mullis—who developed PCR (the polymerase chain reaction), which revolutionized the study of genetics and made genetic engineering possible—said, "I think I might have been stupid in some respects, if it weren't for my psychedelic experiences."

### Psychedelic Technology Begins

In the Sixties and Seventies, the use of psychedelics by creative people in the music industry helped to spawn technologies that combined new forms of music with laser light shows, and magic mushroom-munching film makers were inspired to develop new cinematic techniques that used special effects to mimic the perceptual effects of hallucinogens. For example, Stanley Kubrick, who directed *2001: A Space Odyssey*, was turned on to LSD by Los Angeles psychiatrist Oscar Janiger when the drug was still legal. Many science fiction writers—such as Philip K. Dick, Robert Anton Wilson, Rudy Rucker, Norman Spinrad, and me—have been inspired by psychedelics in their thinking about the future of technology.

In the early Eighties the late psychologist Timothy Leary began promoting the idea that personal computers and Virtual Reality were the "new LSD," and this association between psychedelics and technology was embraced by what became known as the "cyberculture" of the Eighties and Nineties—largely fueled by a San Francisco-based magazine called *Mondo 2000* (which was an inspiration for Kevin Kelly to launch *Wired*). The editor-in-chief of that magazine—Ken Goffman (a.k.a. R.U. Sirius)—joins us in this Bulletin to share with us his thoughts about the future of technology.

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vades virtually everyone's lives today. This history was covered in John Markoff's book *What The Dormouse Said*, and Fred Turner's *From Counterculture to Cyberculture*, which are about how the sixties counterculture directly spawned the personal computer revolution. According to Ph.D. candidate Diana Reed Slattery—who also joins us in this Bulletin—the Web-based search engine Google has become the world's first "psychedelically-informed superpower." The influence of psychedelics on the mass media has become so pervasive that it's hard to even find a television commercial or a computer game that doesn't bear an obvious psychedelic signature. Hollywood and Silicon Valley both appear to have been highly influenced by creative individuals who have experimented with mind-altering substances.

**Psychedelics and Computers**

The internet and the personal computer revolution are especially intimately intertwined with psychedelics. Many of the most influential people involved in developing personal computers, and the software that runs on them, admit to having munched on the forbidden fruit. Bill Gates, founder of Microsoft, as well as Steve Jobs and Steve Wozniak, who founded Apple Computer, all admit to having used LSD during their formative years in the 1960s. Jobs in particular has talked openly about the benefits of his experiences with LSD. He told a reporter from the *New York Times* that taking LSD was "one of the two or three most important things I have done in my life."

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As an early developer for cisco Systems, MAPS supporter Kevin Herbert developed software that now runs on millions of Internet routers worldwide, and he was largely inspired by his use of psychedelics. Kevin joins us in this issue to share some of his insights into how technological innovation can be fueled by psychedelic mind states. Another computer revolutionary who considers psychedelics in a positive light is MAPS Board of Director John Gilmore, who was the fifth employee at Sun Microsystems, and who has also contributed substantial funding to psychedelic research—in addition to promoting free software, increasing the availability of data encryption programs to protect personal privacy, encouraging freedom of information, creating internet security, and reforming drug policy.

Other computer pioneers, programmers and software developers who were positively influenced by psychedelics include Mitch Kapor, one of the founders of the software companies Lotus and On Technology, Mark Pesce, a computer programer who claims to have been inspired by an LSD trip to produce Virtual Reality Modeling Language, and Bob Wallace, the ninth Microsoft employee who coined the term "shareware," created the word processing program PC-Write, and founded the software company Quicksoft. Wallace contributed substantial funding to psychedelic research organizations—including MAPS—before his untimely death in 2003. Reliable sources have informed me that there are many more highly influential software designers who—due to the current political climate—don't want their use of psychedelics to become public knowledge.

Mathematician Ralph Abraham—who wrote the article in this issue about computers, mathematics, and psychedelics—tells a great story about a computer columnist from the *San Francisco Chronicle* who didn't believe the claim made by a writer for *G.Q.* magazine that much of the computer industry was inspired and designed by people who have been influenced by psychedelics. So this reporter attended a Siggraph convention—an annual conference for computer graphic artists—and polled important professionals of the computer graphic field—180 of whom answered yes to the question, "Do you take psychedelics, and is this important to your work?"

However, to people who have used psychedelics this connection appears obvious. Anyone who has ever had an experience with LSD will instantly recognize that computer graphic morphing techniques, for example, were obviously inspired by the way that people's faces appear to someone under the influence of the psychedelic. Trippy computer software graphics appeal to many young people who use psychedelics, and this encourages an intimate relationship between technology and their psychedelic experiences. For example, a college student in Texas wrote me saying, "The MAC visualizer on iTunes makes music a whole other experience, even not on acid. But when you're tripping, it takes you inside it. We think—this software was made for trippin' college kids!"

However, not everyone agrees that psychedelics enhance technical design abilities. When I asked robotics expert Hans Moravec (whose mind-expanding books about the future of technology tend to appeal to readers who have experimented with psychedelics) if psychedelics played any role in the development of his ideas about technology, he replied, "No! I was college age

in the 1960s (and grad school in the 1970s), and quite aware of the fads. I found the idea of mind-altering drugs about as attractive as the idea of using woodshop tools to mechanically alter my brain...I thought, my brain is a complicated, intricate piece of machinery, and there are big things I hope to do with it. No way I want it scrambled! Fine machinery: handle very cautiously. For those reasons, I never took up coffee, alcohol or anything stronger."

Although not everyone agrees about the reputed abilities of psychedelics to enhance technological creativity (although there is scientific evidence that psychedelics enhance creativity in general), it might be noteworthy to this discussion to point out that around a hundred years ago the physicist Lord Kelvin declared that "X-rays are a fraud," and in Galileo's time the Pope refused to look through his telescope. It seems that more than a few people have difficulty accepting aspects of reality that don't fit into their belief systems, and this affects their ability to be objective. There appears to be a sharp division among people as to whether or not psychedelics enhance creativity, and this division often seems to correlate with whether or not these same people have actually tried psychedelics themselves.

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To explore these questions further, and to contemplate the fascinating interplay between technology and psychedelics, we gathered together an exceptional group of contributors for this special edition of the MAPS Bulletin. Penn State Science Technology and Society professor, and author of *Ecodelics, LSDNA, and Technoscience*, Richard Doyle, Ph.D. joins us to share his insights and ideas about psychedelics and the evolution of information technologies.

Educational psychologist Thomas Roberts, Ph.D.—who has been teaching a class on the psychedelic mindview at Northern Illinois University since 1982—shares with us his ideas about the evolution of "psychotechnologies." Computer graphic artist Brummbaer writes about how different acoustic technologies were developed by musicians and sound engineers using psychedelics, and how his own experience with ketamine inspired new computer graphic techniques.

### The Future of Psychedelics & Technology

A few of the contributors in the *Bulletin* point out that psychedelics are a form of technology; a tool for tuning into different states of consciousness in the brain—and like all forms of technology, they may eventually become obsolete.

According to technology theorist and inventor Ray Kurzweil, our developments in technological design are increasing exponentially, and that advances in artificial intelligence, nanotechnology, quantum computing, virtual reality, and robotics will soon lead to a rapid explosion of technological growth and a future of unprecedented marvels—where computers exceed human intelligence, and biology and technology merge indistinguishably from one another. All of our present-day psychedelics may appear crude, overly general, and too unpredictable and nonspecific for this superior race of super-beings. It will certainly be interesting to see what sort of chemical keys they will develop in these far-flung futures, and what sort of technological wonders they will in turn inspire.

Already, technologies have been built that induce altered states of consciousness through electrical stimulation, light and sound brainwave entrainment, and magnetic fields. These new technologies, although still in their early development, may someday lead to devices that reliably and safely bestow a full-blown psychedelic experience upon the user, and perhaps different factors could be modulated to create very specific types of experiences.

### A Tribute to Laura Huxley

Also featured in this special edition of the *MAPS Bulletin* are tributes to writer and psychedelic investigator Laura Archera Huxley, who died of cancer at the age of 96 on December 13th, 2007. Laura is best known for her memoir, *This Timeless Moment*, about her husband Aldous Huxley's final struggles with cancer, and how she assisted him during his dying process by administering LSD at his request. Laura's work was a big inspiration to many of us in the psychedelic community and we will miss her wise, noble, and graceful spirit.

Wo/Men's Alliance for Medical Marijuana (WAMM) cofounder Valerie Leveroni Corral joins us to write about Laura's life, and her experiences with Laura as she was dying. Big Sur poet and painter Carolyn Mary Kleefeld (who did the spectacular cover art for this *Bulletin,* "Dionysian Splendor"), shares a farewell message and poem for Laura, and she also did the painting of "Laura Huxley's Departure" on the inside back cover. The back cover photo of Laura Huxley was done by Dean Chamberlain, and the other mind-expanding art in the *Bulletin* was done by Brummbaer and Sara Huntley. •