

Should This Exist? Transcript – Psychedelics

Can we trip our way to better mental health?: Should This Exist? with Caterina Fake

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CATERINA FAKE: Hi again, it's Caterina. For most people, the term "psychedelics" immediately makes them think of the '60s.

ARCHIVAL: Drop out of college, drop out of graduate school, drop out of junior executive.

FAKE: America was in the grips of a cultural revolution, fueled in no small part by LSD evangelists like Harvard psychology professor Timothy Leary. He saw psychedelic drugs as a way to cut through the illusions of self, society, the world – you name it.

TIMOTHY LEARY: Turn on, tune in, drop out.

FAKE: Young people embraced psychedelics not only as a way to get high but also as a way to signal their membership in the growing countercultural movement. This led to a sweeping moral panic that made it all the way to the White House.

ARCHIVAL RICHARD NIXON: America's public enemy number one in the United States is drug abuse.

FAKE: Psychedelic drug use wasn't something that Americans "invented" in the '60s. Indigenous people the world over have used psychedelics as medicine or for religious ceremonies from cultures that predate us by thousands of years.

And only now has the panic worn off enough for us to allow scientists to study exactly what psychedelics do. There are those who go so far as to call the current era of psychedelic research a renaissance, using psychedelics to treat:

DAVE NICHOLS: Depression, anxiety, addictions to alcohol, nicotine, cocaine, obsessive compulsive disorder.

FAKE: Not to mention PTSD, eating disorders, and the fear of death experienced by patients with a terminal illness.

NICHOLS: I don't want to don't want to call it a magic bullet or a philosopher's stone, but all of these things look like they're going to yield to treatment to one degree or another.

FAKE: That's Dave Nichols, a pioneering chemist who's been working with psychedelics for decades. He's answered one question countless times during his career: Why would you choose to study psychedelics?

NICHOLS: Think of the things that can change your life: You fall in love, you get married, you have a child, maybe a parent or sibling dies, something traumatic like that happens – or you take a dose of LSD. Think about that. How is it possible that a small molecule like that can get into the brain and produce such a profound change?

FAKE: Now the psychedelic awakening Nichols has hoped for finally has momentum. But there are questions about the potential for therapeutics and the potential for abuse. Will psychedelic medicine find its long-sought niche in the scientific establishment? Or are its promises too good to be true?

[THEME MUSIC]

FAKE: Hi, we're back and exploring the science, politics, and culture of today's psychedelic renaissance with Dr. Dave Nichols, who's playing his harmonica. Dr. Nichols and I spoke remotely during the early weeks of the pandemic, while he was at his home in North Carolina, staying busy.

NICHOLS: Mostly reading books. A little bit of work on the computer. I'm supposed to write a chapter or a journal article. And I've been reading some books as background for that.

FAKE: Dave's 75 and now an adjunct professor at UNC – but spent most of his career at Purdue University in Indiana, where he was professor of medicinal chemistry and molecular pharmacology. A story that's familiar to me.

FAKE: My mother studied pharmacy at Purdue also.

NICHOLS: Really?

FAKE: She might have been before your time.

NICHOLS: Yeah, I didn't start at Purdue until '74.

FAKE: If psychedelic research is undergoing a renaissance right now, it's only because it had to go through a dark age first. Dave spent most of his career trying to bring validity to the field of psychedelics.

But due to Federal restrictions, for nearly 30 years, Dave was only one of very few academics in the world who could legally make these drugs, thanks to a grant from the National Institute on Drug Abuse.

FAKE: I mean, doesn't sound like you're, you know, tripping every weekend?

NICHOLS: No, no, no, no. I was rarely tripping. Let me put it that way, very rarely. I'm a pretty conservative person still. Interested in really interested enough in some things to explore but you know, I couldn't have kept my job at a pharmacy school if I'd been doing, if I'd been behaving like that.

FAKE: I also hear that you don't even drink coffee these days.

NICHOLS: No, I never developed a taste for coffee and don't drink alcohol either. So pretty strange.

FAKE: The straightest psychedelics researcher around.

FAKE: Dave Nichols, in many ways, is the polar opposite of Timothy Leary. Understated instead of outrageous – and sober, to boot. But Dave's influence is profound. It kind of had to be given that he was one of the only people who could legally make drugs like MDMA, commonly known as ecstasy.

In fact, Dave made the MDMA for a breakthrough piece of clinical research using the drug to treat PTSD in veterans and victims of sexual assault. And now, MDMA's on track to become legal for clinical use in the next few years.

When Johns Hopkins wanted to do research treating anxiety and depression in cancer patients, Dave was the one who made psilocybin for them, the compound in magic mushrooms. He's a pioneer, but perhaps an unlikely one. Dave had a conservative upbringing in Kentucky and was the first member of his military family to go to college.

NICHOLS: But when I graduated from high school, we didn't have much money, and my parents couldn't send me away to school. So I lived at home and commuted to University of Cincinnati. But all my friends went away to college, and they started to come back and saying, "Oh, yeah, we're smoking reefer and you know, people dropping acid."

And I go, "What? What are you talking about?" And so I went over to a used bookstore and bought a book of pharmacology and started reading about them. Well, marijuana is not dangerous. I mean, this isn't dangerous according to these pharmacology texts. So then I thought, Hmm. You know, they were talking about people who were taking LSD. And these are really interesting compounds. What are they actually?

FAKE: Dave's curiosity led him down a rabbit hole of history, a history spanning thousands of years, going back to ancient India, Greece, and South America. It was only a matter of time before he started sharing that history with his students.

NICHOLS: There was a weaving, a tapestry, that was unearthed from a digging in southern China that had an illustration of a priest doing in a ceremony, a Zoroastrian ceremony of some kind, and he was holding a mushroom up in his hand. And when I've given a talk, and I've shown that, I said I doubt that this priest was having this ceremony in worship of eating a regular mushroom. So that goes back in the kind of ancient pre-history.

FAKE: Fast forward from Ancient China to the 1940s. A chemist named Albert Hoffman has synthesized LSD from ergot fungus, enabling the Swiss pharmaceutical company Sandoz to manufacture it at scale. This ushered in the golden age of psychedelic research in the 1950s and '60s, when LSD was being used to treat a wide variety of mental health disorders.

ARCHIVAL: Interesting results have been reported on the therapeutic use of LSD with the mentally ill, the drug addict, the terminal cancer patient, and in the VA hospital in Topeka, Kansas, a special research program for alcoholics.

FAKE: More than 40,000 patients were given LSD in therapeutic settings during this period. Here's a patient in the 1950s being given LSD by a psychiatrist at the VA Hospital in Los Angeles.

ARCHIVAL: Well, I think it's time for you to have your lysergic acid, drink this down. And we'll be back after a while and see how you're doing.

FAKE: More than a thousand scientific papers were published detailing the results of these studies.

ARCHIVAL: Well, tell me.

PATIENT: I couldn't, I couldn't possibly tell you. It's here. Can't you feel it. This whole room – everything is in color, and I can feel the air, I can see all the molecules.

FAKE: But once LSD was adopted by the hippie movement, that research came to a screeching halt. LSD was outlawed in 1968, ending countless lines of research overnight.

NICHOLS: And it's kind of sad, because a lot of this work could have been done 50 years ago, but it was all just shut down. It's really how politics is really when it becomes involved in medicine.

ARCHIVAL RICHARD NIXON: I've asked the congress to provide the legislative authority and the funds to fuel this kind of offensive. This will be a worldwide offensive.

FAKE: In 1970, President Nixon signed the Controlled Substances Act. Most psychedelics were listed as Schedule 1 drugs, meaning that, in the eyes of the government, they had no legitimate medical purpose and a high potential for abuse.

It was around the same time that Dave Nichols was studying for his doctorate. And despite the fact that most of the molecules he wanted to study had been outlawed, he remained undeterred. Eventually, Dave had a Schedule 1 license for 15 different substances and was determined to understand how these drugs changed the brain.

NICHOLS: Psychedelics really do bring out things in the mind. Stan Grof said that they were unspecific amplifiers of unconscious processes. They manifest properties of the mind that are ordinarily not visible. They bring out parts of the unconscious or subconscious mind.

FAKE: Dave Nichols is quoting Stanislav Grof, a pioneering Czech psychiatrist who also said the potential significance of psychedelics was “comparable to the value of the microscope for biology or the telescope for astronomy.”

NICHOLS: When I talk about it, I still visualize, you know, this sort of distant green glow of the universe, off in blackness.

FAKE: Fifty years after, Dave's still able to vividly recall an experience he had in college after taking mescaline, the active substance in peyote. He was already curious, but that experience was formative.

NICHOLS: My eyes were closed, and I had this vision that I was projected outside the known universe. And, you know, that doesn't really register when I talk about it today. But at the time, I was like, wow, that's what infinite nothingness means. And the universe was giving off this kind of hum. And I recognized at that moment that the function of the universe was to serve as a womb for life.

FAKE: That experience was significant and instilled in Dave a deep belief that researching the effect of psychedelics on humans would yield dramatic results. But because of Nixon's War on Drugs, Dave spent years studying the effects of psychedelics on mice. It wasn't enough.

NICHOLS: I would go to scientific meetings, and we'd sit, and I'd have a beer with somebody after the meetings in a social hour. And we'd bemoan the fact that there was no clinical work going on. And what we were doing in mice and rats, it just didn't reflect what psychedelics actually did. And I'd say, you know, we need clinical studies. And they go, “Yeah. You'll never get those again. You know, these are banned, yada, yada, yada.”

FAKE: Eventually, Dave decided to forge his own path. In 1993, he founded the Heffter Research Institute, which helps design and fund research into psychedelics. But early on, the private donors the institute relied on, were hesitant to be associated with “drug research.”

NICHOLS: We had one real estate developer and his wife and they gave us early on about \$10,000. And then he said, “But no one can know where this money came from.”

FAKE: Even so, federal attitudes toward psychedelics were starting to change in the early ‘90s. The FDA and the DEA started saying yes to study proposals at the University of New Mexico, UCLA, and the University of Miami.

And now, decades later, in the midst of the psychedelic renaissance, researchers are still trying to understand exactly how psychedelics interact with the human brain.

NICHOLS: And it involves kind of a resetting of brain dynamics. Is this the best explanation that anybody’s come up with so far. We think there’s basically a change in brain dynamics that somehow resets the electrical dynamics, the properties of the brain that lead to these efficacies in all these different types of disorders.

FAKE: There’s still a lot to learn about this class of drugs. For right now, the future of psychedelics beyond clinical trials remains hazy. And even Dave Nichols believes psychedelics aren’t a magic bullet to solve all these mental health problems.

Coming up, we’ll hear first hand from patients who’ve had some successes with psychedelics. And we’ll hear a horror story, of sorts, when drugs that were made in Dave’s lab showed up on the street with deadly consequences.

[AD BREAK]

FAKE: Hi, it’s Caterina and we’re back with Dr. Dave Nichols. And he’s telling me one of the potential pitfalls of the drugs he spent his life creating.

NICHOLS: None of the drugs we ever made were ever tested for toxicity or toxicological effects or never expected to be in humans. So by going to the literature and just searching and under my name, they found all kinds of things.

FAKE: Dave had secured himself a grant to study MDMA for use in psychotherapy back in the ‘80s, long before most people had even heard of the drug. In an effort to understand how MDMA worked in the brain, he made an analog, MTA, to use on rats. He published several papers about MTA that, years later, piqued the interest of some amateur chemists sleuthing around on the internet for new compounds.

By 2002, MTA was being sold on the street, pressed into tablets called “flatliners”, and had resulted in six deaths.

FAKE: You know, your quintessential bad actor would be a reckless and thoughtless drug purveyor of street drugs.

NICHOLS: Yeah, you know they don't think about whether this might kill anybody, and that'll be that. “We'll make a bunch of money and then shut the lab down and move someplace else.”

It's kind of ironic because the original things – like mescaline, psilocybin, LSD – are not they're not really toxic drugs. Marijuana is not toxic at all. Never killed anybody in overdose, but then it's illegal. So you have people making these spice mixtures which are synthetic cannabinoids that have properties like marijuana, but in some cases are really toxic and have killed people.

In fact, I had a graduate student who said, “Make one drug illegal and a more dangerous one will take its place.” And there's some truism in that.

CHARLES GROB: There's a need for the field to develop structures and provide proper vigilance whereby individuals conducting this work will do so with the utmost care and caution.

FAKE: That's UCLA psychiatrist Dr. Charles Grob, who is another early psychedelic pioneer. He conducted foundational studies with his patients using both MDMA and psilocybin.

GROB: For instance, we have the phenomena over the past year of several cities out in the West – actually first in Denver and then in Oakland, then in Santa Cruz – there's been an initiative passed which has essentially decriminalized mushrooms and in some cases other psychedelic plants as well, or at least turned these compounds into the lowest law enforcement priority, which is tantamount to decriminalization.

FAKE: Dr. Grob is an advocate for psycho-education. That is, making sure that psychedelics are used in the proper environment, in the proper dosages, under the supervision of a psychotherapist, for the best possible outcomes.

FAKE: What do you see as the greatest potential for psychedelics going forward?

GROB: The best place to apply psychedelics as treatment models would be with patient populations that do not respond well to conventional treatments. So, for instance, treating the existential crisis, the existential distress and demoralization of individuals with potentially fatal medical illness.

FAKE: Many of Grob's studies have focused on treating anxiety in adults with late stage cancer. The participants take a dose while a therapist stays at their side. They wear eye shades and listen to soothing music. It's a safe, controlled environment, where, over the course of several hours, people can let down their defenses. The experience, in many cases, is nothing short of mystical.

GROB: A sense of awe, a sense of reverence, a sense of that there was something more to the kind of the mundane here and now, that there was a greater power. Now, it's curious that depending on their background regarding different religions, but there were commonalities of an altered state of consciousness that really seemed to reflect, you know, a mystical level of experience, of almost a mystical nature.

FAKE: A majority of participants in Grob's studies report a kind of merging with the universe, or nature or other people. The consistency of these reports has pushed scientists studying psychedelics to look into questions that are almost spiritual in nature.

FAKE: I mean, it makes perfect sense that you would use this kind of, you know, spiritual kind of aid, frankly, at end of life.

GROB: Oh, yeah. Because these experiences in and of themselves have been demonstrated to often be predictive of a positive therapeutic outcome, which in the case of treating individuals with advanced cancer would be amelioration of anxiety, improvement of mood, improvement of overall quality of life in the time remaining.

FAKE: What we've seen you know, with this kind of recent renaissance of psychedelics are, you know, now it's being seen as there are so many potential therapeutic applications that people are kind of pointing to PTSD, eating disorders, addictions. Do you think that this might be over promising and too good to be true?

GROB: Well, there's only one way to find out, and that's to do the studies. And that's happening.

FAKE: Yeah.

GROB: So I think there is considerable potential.

PATIENT: Something about this study intrigued me. And for some reason, I thought that this might be a way to tap something even deeper.

FAKE: This patient was part of a psilocybin study at Johns Hopkins University for patients with anxiety and a cancer diagnosis.

PATIENT: It was about a higher power, being in a place of infinite space, and just being there. And it touched me, and it was incredible. And there is no way I can explain it other than that. It was unbelievable. It took my breath away.

FAKE: Johns Hopkins is America's oldest research institution and has published multiple foundational studies in patients with anxiety and a life threatening cancer. The most recent shows 80% of patients were less clinically depressed and anxious six months after treatment with psilocybin. Some report even losing their fear of death. Then Hopkins moved to studying tobacco addiction. A year after, 67% of smokers in the study were still abstinent.

Studies show there is a pointed boost in communication areas of the brain that typically don't talk to each other, which may somewhat explain the new insights patients report. There's also a calming of deeply rooted thought patterns that lead to anxiety or addictions.

PATIENT: I drank a lot – and I drank every night, every day, everywhere. It just was part of my life.

FAKE: A patient who participated in a psilocybin study at the University of New Mexico.

PATIENT: That first experience was painful. I mean, I felt physical pain – raw, guttural, sobbing, emotion. And as hard as it was then, I'm so grateful for it. I needed to see that. The second session, that experience was bright and light and hope.

FAKE: And after only a few doses – sometimes a single dose – some patients quit in conjunction with cognitive behavioral therapy. Psychedelic experiences can rattle them out of patterns of thought where suddenly they view them from a new perspective, as what happened to this patient from an NYU study.

PATIENT: Somebody called me up today, and they said, how are you? And I said, wonderful, and I am sixty-five years old and I have never... I just heard that coming out of my mouth. I have never said that. Never.

And I just know that if in the future this could be used with all patients – under the direction of mentors, shamans, psychotherapists – it would make for a much happier world.

MOLLIE PLEET: I think the speed of change is what is most profound in these studies when they really want to go deeper, more quickly. And so I think that's the real potential these psychedelics have in the field of mental health care.

FAKE: Dr. Mollie Pleet is a clinical psychologist. She works in private practice and as a clinical research fellow at the University of California San Francisco where she has been a facilitator in clinical trials. She foresees psychedelics could become a valid part of her professional practice in the years ahead.

PLEET: For some people, it just seems like the difficulties are so deeply entrenched. And, you know, different brains operate in different ways. And some people really need what seems like a hard reset. And I know that it's been very frustrating for some people who've undergone even years of psychotherapy and found that it's not fully working. And there's many reasons for that.

I'll say that I didn't become a psychologist, because I thought psychotherapy doesn't work. I know it works. And yet, there are some difficulties that really entail so much personal overhaul in order to overcome, that it sometimes takes something more dramatic to create real change overall.

FAKE: Another factor that drew Dr. Pleet to the field of psychedelic therapy and research was her work in psychedelic harm reduction in music festival settings, where she joined other medical staff in a tent.

PLEET: So there was one specific day that made an enormous impact on me, and really I think changed the course of my life as I considered my role in the evolving field of psychedelic therapy and research.

FAKE: About a year ago, a woman came in who'd she seen on the festival grounds, who seemed very outgoing and connected within the community there.

PLEET: And she was brought in by a friend who was very concerned because she seemed to have taken a much higher dose of a psychedelic than she had intended, what they believed was LSD. And since then had become increasingly distant from those around her. She was sitting in silence, sometimes sitting up to meditate and then would have intermittent experiences of crying, yelling, moving around physically. It seemed like she was trying to communicate with me, but really couldn't because she was in just such an altered space.

FAKE: The woman slowly regained her ability to verbalize and then broke down in tears processing what had been going on internally.

PLEET: There was a dramatic therapeutic shift for her that we actually caught up later on in the festival. And she was able to tell me more specifically about what she was experiencing, and what it meant for her in her real life, and really just appreciating that there was someone around to provide the safety and support and reassurance that she needed to experience the level of change that she was able to have in that moment, even though she didn't intend to go as deep as she did.

And on a personal level, I just realized then that, I mean, sitting with people in expanded states of consciousness is quite literally the most profound experience that I've had and that I really think could have as a psychotherapist. Getting to bear witness to people's internal processes in ways that allow them to really release and work through emotional burdens, that's really a therapist's dream. And in these altered states, it happens so

deeply, so quickly sometimes and with such profound results, that I honestly can't imagine devoting my professional life to anything else.

FAKE: In a moment, we'll return with Dr. Dave Nichols. Psychedelic research had a decades-long hiatus, but now that it's experiencing a renaissance, what does the future hold?

[AD BREAK]

FAKE: Hi it's Caterina, and I'm back with Dr. Dave Nichols, now an adjunct professor at the University of North Carolina. And we're discussing East Coast / West coast perspectives on how psychedelics have impacted the culture.

FAKE: Well, what I'm seeing out here in Silicon Valley is that there's this psychedelics renaissance happening. But to some extent there's also the adoption of psychedelics by wellness seekers. You know, there's this booming, unregulated market of people calling themselves experts that aren't experts. And I don't know if you see that from where you sit in North Carolina, in Chapel Hill.

NICHOLS: Yeah, I haven't seen that here. I did go to a reception in San Francisco some years ago and there was a fellow there who is passing himself off as a kind of drug expert. And somebody said, oh, you've got to go out and talk to Dave Nichols.

And I said, What's your story? And he was taking all these substances, most of which were just experimental, that were never meant to be in humans, and making blends and going and selling them to people basically in Silicon Valley.

And I said, Do you know what these things do? I mean, how do you know that these drug combinations you're putting together, you know, don't poison people?

Well, you know, I take them first.

Oh, yeah. I said, you need to stop doing that. You should go to school and get a degree and learn pharmacology before you poison somebody. It troubles me.

FAKE: There is this kind of like, rogue shaman movement. Yeah, yeah.

NICHOLS: Everybody's a shaman. If you get a bag full of illegal drugs, you know, it gives you a lot of power.

FAKE: The threshold is pretty low for admittance into that category.

NICHOLS: Really, really.

FAKE: Putting the Silicon Valley charlatan shamans aside, credible, legitimate psychedelic research is expanding, not only in the U.S. but also parts of Europe. Johns Hopkins University has taken \$17 million in donations from private donors to launch a center for psychedelic research, the first of its kind in the U.S.

And Dave Nichols has inspired the next generation of psychedelic researchers, including his own son, who's now a professor of pharmacology at Louisiana State University, studying the anti-inflammatory effects of psychedelics.

And as if ushering a son into a field he helped pioneer wasn't enough to be proud of, Dave Nichols recently hosted the first ever meeting of the International Society for Psychedelics, as their first president.

NICHOLS: We had our first meeting in October, New Orleans. We had 111 people there, and that was mostly just U.S. people. There's probably 150 in the world at least who are working in this field in one way or another. And when I started in 1969 as a graduate student, there were maybe half a dozen people that were working in this field.

FAKE: The future has arrived.

NICHOLS: It's a bit amazing.

FAKE: The future you had anticipated. It's here.

NICHOLS: Yeah. We're getting real close. I'm hoping I'm still alive when these things are approved and into the market. That will be the final vindication.

FAKE: I'm Caterina Fake.