4

Alexander T. "Sasha" Shulgin and Ann Shulgin

Frontiers of Pharmacology: Chemistry and Consciousness

Born June 17, 1925 • Alexander "Sasha" Shulgin is a pharmacologist and chemist renowned for his discovery of many new psychoactive compounds. Born to a Russian émigré father and American mother in Berkeley, California, he began his education at Harvard University, where he stayed only two years before enlisting in the U.S. Navy. Discharged following the end of World War II, he resumed his studies at the University of California Berkeley, where he received both his bachelor's and doctorate degrees.

After receiving his PhD in 1954, Shulgin engaged in postdoctorate work in pharmacology at the University of California San Francisco before embarking upon a career as a research scientist in industry. During the early 1960s he eventually reached the position of senior research chemist at the Dow Chemical Company.

In 1960, Shulgin took mescaline for the first time. Fascinated with the subjective response, he went on to develop expertise in the synthesis of chemicals similar in structure to mescaline. Subsequent to his departure from private industry and Dow Chemical in 1965, he went on to teach pharmacology and public health at the University of California Berkeley and San Francisco General Hospital.

In the late 1960s he was first introduced to MDMA, which he believed held great potential in psychiatric treatment. In 1976, some years after developing an improved synthesis of MDMA, Shulgin provided the compound to a psychotherapist friend and colleague, Leo Zeff. From that point in time, hundreds of psychotherapists were introduced to the MDMA treatment model developed by Zeff before the drug was scheduled in 1985.

Over the span of his long career, Shulgin has discovered a variety of novel psychoactive compounds. As well, he has synthesized and tested hundreds of additional compounds, meticulously catalogued in over two hundred articles in professional journals and four books. Shulgin has also published detailed descriptions of his rigorous experimental methodology for human self-administration.

Born March 22, 1931 • Ann Shulgin worked extensively as a lay therapist with psychedelics such as MDMA and 2C-B while they were still legal, as well as with hypnotherapy. With her husband Sasha, she has coauthored the highly influential books *PIHKAL* (*Phenethylamines I Have Known And Loved*) and *TIHKAL* (*Tryptamines I Have Known And Loved*), which summarize their extensive research. She is currently working with Sasha on their forthcoming book in this series, tentatively titled *Book 3*.

SASHA: TAKING 400 MILLIGRAMS of mescaline got me involved in studying psychedelics, and the magic has not left me yet. Interestingly, for Ann it happened almost at the same time, with the same compound and the same guide, which is quite a coincidence. We didn't know each other, and we didn't know our guide knew the other.

Ann: I was in my twenties at the time, and although I hadn't had any experiences with extrasensory perception, I'd had the spiritual experience that I detailed in our book *PIHKAL*. That experience convinced me that there was a nonphysical world of some kind. I read Aldous Huxley's books, *The Doors of Perception* and *Heaven and Hell*, which convinced me that psychedelics could open up an entrance into this nonphysical world. At the time, I felt that ESP functioning was repressed in most people, because they're taught that no such thing exists. Therefore, they think that they're nuts if they find themselves experiencing these weird things. So I suspected that the psychedelic experience might take away this sort of defensiveness.

Might a particular class of psychedelics be better at facilitating telepathic phenomena? For example, what about the empathogens—those phenethylamines, such as MDMA (Ecstasy), where individuals experience a profound emotional connection? Would these substances be interesting to test ESP?

Sasha: Absolutely! Those are heart to heart, or head to head, person to person.

Ann: You have to have a drug and a dosage strong enough to allow the subject to overcome the conditioning that says "this can't happen," and "if it does, this is chaos, weirdness, and frightening." The subject has to be able to move into another reality and accept it.

Sasha: If you begin by denying that this can happen, you create a situation in which it can't happen.

Ayahuasca has traditionally had an association with telepathy. When the Germans isolated one of the active ingredients from ayahuasca, harmine, they originally called it "telepathine." But other than that kind of folklore, is there any evidence of harmala alkaloids fostering telepathy?

Sasha: I'm hesitant to emphasize a single compound, because different people have different responses.

How has your work with psychedelics affected your lives and your careers?

Sasha: In essence, it has shaped my career. I've taken it as an intriguing challenge to try to find some synthesis between chemistry as a discipline and brain chemistry as a mysterious unknown, and to discover chemicals that can be used as tools to help explain that interrelationship.

I hold a very firm belief that we give too much power to the drug. The drug is a facilitator or a catalyst at most, but the real power lies inside us. The drug merely lets us see or do with more ease.

Ann: But you don't want to go to the other extreme, saying that it doesn't matter what drug you take. The fact is that if you take DMT, you will not open the door that mescaline will open. They open different doors, and offer different experiences. But the experience is still part of your own interior condition, it is not contained in the drug. Because what you get is what your psyche or your inner teacher thinks it's time for you to get.

Sasha: The doors are in your own mind.

How have your experiences with psychedelics affected your beliefs about the nature of mind?

Sasha: Well, I've abandoned any confidence that you can learn much abut the mind from the brain. So, I moved from researching the brain to exploring the mind quite intentionally, quite to the offense of the scientific community, who like to think the brain holds all the answers. They think you can take a section of rat brain, make it radioactive, photographic it, and know how psychedelics work. I don't think you know at all. You might learn where the radioactive tracer in some compound went, but not how the compound worked. I've been asked time and again: "How do psychedelics work?" I don't know how they work. The whole picture doesn't hang together yet.

The search for explanations of psychedelic experiences quite often leads to the use of words which are most often associated with religion or spirituality. If one keeps the search for explanations for psychedelic activity restricted to the brain, the terms encountered involve receptor sites, synapses, and neurotransmitter concentrations. But when one explores a bit further, into the dynamics of the *mind*, the words become harder to find. The medical dictionary doesn't help when there are unanswered questions involving telepathy, reincarnation, or the eternity of the soul! I believe that many of these phenomena are real, and I hope some day to catch a glimmer of understanding.

Why do you feel there has been so much resistance to these drugs and to researching their effects on the mind?

Ann: The general populace of our country has been encouraged by the government to be afraid of all mind-altering drugs, except perhaps alcohol. Spokespersons for the War on Drugs have encouraged the public to believe that psychedelics and MDMA are addictive, like heroin and cocaine, while the voices of people who truly understand psychedelics have been too few, or too afraid of retaliation, to be loud and persistent.

The main reason for the prejudice against psychedelics in the scientific and academic communities is, I believe, the same as that which motivates the lawmakers, and that is a deep-seated fear of their own unconscious psyches. An unconscious fear of the unconscious, you might say. This fear relates to the shadow parts of themselves, of which they are usually unaware. Any drug that opens doors to the shadowland is seen as a threat, because these people have not explored this inner territory, and they associate it with psychosis and chaos. Since they do not dare unearth what they unconsciously dread in the depths of themselves—the hidden axe-murderer or uncontrolled monster—they project this danger onto anyone using a psychedelic. Fearsome laws and legal punishments are the result.

The rest is, of course, a simple matter of power. Governments do not easily tolerate challenges to their pronouncements, and once a drug has been officially declared "harmful" by a government agency, the voice of a dissenter becomes the voice of an enemy.

Sasha: I'm of the position that no government, politician, nor head of the justice department, nor DEA should practice medicine and say what drugs you can or cannot use. Here I get into trouble with some physicians, but I don't even believe *physicians* have the right to say what you can and cannot use. I think the individual has that right. Now, the individual is an idiot if he doesn't ask a physician for advice. But the final decision should

be the individual's. Sadly, the ability to *make* such decisions was taken from the individual in 1912 and put into the hands of the Food and Drug Administration. From there it was put into the hands of the government, which began dictating what drugs can and cannot be used. It's been taken out of our hands, and we've been left with an absurd "war" on some drugs.

What are your views of the War on Drugs?

Sasha: I wrote a chapter in our book *TIHKAL* called "Cui Bono?" Literally: "To whose benefit?" For example, if you were investigating a crime, you would ask: who might benefit from that crime? And the whole War on Drugs is dedicated—though I don't think this is a thought-out process—to moneymaking, power, and control.

Politicians think, "If we only increase the penalties by another 10 percent, I'll be reelected." Then consider the amount of money that goes into prisons as opposed to schools. So, it's all reinforcing! The only way you're going to undo it is to deprive the people who benefit from it. And they're not about to let you! So I don't see it being undone at all. Oh, there may be slight moves toward liberalization of medical marijuana, or slight moves toward research with psilocybin, but probably not much more.

Ann: I think that the cure for this entire problem can come from only two directions. One is the media, and the other is the religious community. If psychedelic use is going to be allowed, I think it will have to come through people asking that they be allowed as spiritual tools.

What led you to introduce MDMA to the psychotherapy community?

Sasha: Several things. First, while on it I experienced a state in which I was able to be attentive without much stimulation, and able to hear and respond to someone else's comments and questions without imposing my own ego upon them. I was especially able to search out a problem within my own internal world and openly admit to myself that it really existed and could be addressed. Some of these events have been sketched in the MDMA chapter in our book *PIHKAL*.

With a modest dose, I felt as though I had access to the help of a gentle psychotherapist with whom I could openly share private feelings and worries. And I had total confidence that I could drop any inhibitions I might have about sharing my private life. To my continued fascination, I *myself* was that gentle therapist. I could talk to myself quite honestly, trust myself with some disturbing personal problem, and then allow myself to search for a solution. Amazingly, there was total and accurate recall of the entire experience. This inspired me to share it with a dear friend who was an intuitively gifted therapist, and the rest is history!

Were you surprised when MDMA was outlawed?

Ann: I was, mostly because it was such an unbearable thought, I hadn't given it any room or energy. Along with many others, I wept the day I heard this dreadful thing had happened.

Sasha: I too was very saddened, but not surprised. The wave of popular use, under the name of "Ecstasy," was seen by government authorities as a resurgence of the out-of-control mania that accompanied the popularization of LSD in the 1960s and cocaine in the 1970s.

The youth were seen to be acting up without any social responsibility, and something would have to be done about it. It seems to be part of our embedded philosophy, that if something is so out-of-hand, it must be brought under control by prohibition. This has never worked before, and it isn't working now.

By the mid-1980s was recreational MDMA use, particularly by young people, actually a serious problem?

Sasha: I'm not sure of your definition of a "serious problem." Every one of us has been a teenager. And most of us went through a stage that might be described by the phrases, "I'll do what I want to do," and "Don't trust anyone over thirty," and "I am immortal." That "youth phase" can involve music, sex, drugs, and other related forms of rebellion. It has happened in the past and it will happen in the future. Is this a serious problem? Not necessarily. I see it as a fact of life. It is an expression of divine independence that is sadly forgotten by many of us as we mature into serious and responsible adults. Would most of us want to relive it? Probably not. But do most of us regret having lived through it? Probably not.

Do you think the "rave" phenomenon would have become so widespread if MDMA had not been scheduled in the mid-1980s?

Sasha: That's a hard one to answer. I feel compelled to judge this type of activity—from the distant past right up to today's problems—by saying that prohibition does indeed play a very important role. The disallowing of unwanted behavior, be it in areas of religion, economics, private relationships, or public opinion, has never withstood the passage of time. The scheduling of MDMA in the mid-1980s brought the flavor of criminality to its use, thus providing a tangible symbol for the definition of illegal behavior. It gave wide publicity to a compound that was formerly not too well known. A negative action of those in authority against something often provokes young people to suspect that there might be some reward there that they had been unaware of! "They wouldn't be opposed to it unless there was something worth while there."

Ann, how did you become an MDMA psychotherapist?

Ann: In stages. I became a lay therapist using MDMA in the early 1980s when it was still legal. In the first stage, one or another of our friends would ask to spend an afternoon with Sasha and me, making it clear that he or she wanted to use MDMA to help sort out some personal problems. At first, Sasha and I would both spend time with such a friend, but we discovered that I was more able to handle the psychological insight process than Sasha. Very quickly it became my job, and he happily retired to his study after greeting the friend/client, leaving the rest to me.

At this early stage, the average number of clients was somewhere around one per month, and I was still doing what most beginning MDMA therapists did at that time: taking MDMA with the client. After a few sessions, I realized that it was counterproductive for me to take the drug along with the client, because it was essential for me to concentrate intently on what was happening with the patient. It also dawned on me that I didn't *need* to take MDMA to increase my empathy or understanding of what was going on in the client, and that I was not dependent on the drug for opening up whatever abilities I might have as a therapist.

Gradually, the number of patients increased. One dear friend, a psychiatrist who was ready to retire, did some work with me, and after this he sent me two of his most difficult patients, both of whom he described as his "failures." He added, "Let's see what *you* can do with them." It was a challenge, and I learned a tremendous amount from both people.

One of these patients was a man who was psychologically addicted to the use of nitrous oxide, also known as "laughing gas," which is used by dentists as an anesthetic. After months of work, and good bonding with me, he was still occasionally using nitrous.

Then, one day, he tucked himself into bed with his nitrous bottle, and pulled the sheet over himself for privacy. Needless to say, he was found dead shortly afterwards. I was surprised, briefly angry, then simply sorrowful at the inevitability of the death. Neither I nor the magical drug, MDMA, had made a serious dent in this gentleman's devotion to nitrous oxide, and neither of us had created in him a strong enough interest in living. From this case I learned, for the first time, that MDMA couldn't solve everyone's problems. I also learned that, no matter how hard I might try, I couldn't, either.

The second patient was a classic borderline personality, which I was not experienced enough to recognize for quite a while. When I finally understood, I also had to admit to myself that there wasn't much I could

do to change his very old and ingrained habits of distorted thinking and behavior. He was in his sixties, and he was unconsciously determined to keep his world just the way it was, since he knew the rules of his game and how to manipulate the people close to him sufficiently well to stay safe and—in a strange sense—contented.

It was a new experience for me, having a client who lived in a very dark castle, complete with imaginary moat, whose major effort was, not to make his way out of his darkness, but to draw his therapist into it to keep him company. When I fully realized what was going on, and what would undoubtedly continue going on forever if I worked further with him, I found him a new therapist. He seemed perfectly happy to make the change, and the last thing I heard was that all was going very well. I spent a good deal of time thinking about what this man had taught me, on many levels, and what the term "borderline" meant. Again, MDMA had changed nothing, and neither had I. But I had learned a lot.

After about a year—during which I didn't charge for my services—I met a hypnotherapist. She was mentioned in our second book, *TIHKAL*, where we called her "Audrey." This was my first work with the shadow, and my first use of hypnotic trance along with MDMA. The combination worked extremely well, and after six months of intense work on both our parts, Audrey's shadow problem was successfully resolved.

A few months after that, she asked me to work with her. We worked with carefully selected patients who had completed their hypnotherapy with her, and were now ready to continue with spiritual growth work, using MDMA and some other psychedelics such as 2C-B. Both drugs were legal—or, as Sasha says, "not illegal"—at that time. I spent two years working with Audrey, and the experience was extraordinary. Again, I have written about this time and what I learned from it in *TIHKAL*, in a chapter titled "The Intensive."

When MDMA was made illegal in the mid-1980s, Sasha and I decided to write our first book, and I left the practice of psychotherapy with deep regret. I knew that I could not possibly do both writing and therapy, since each demanded full concentration and tremendous mental energy. As well, the continuation of MDMA therapy would necessitate going underground, involving Audrey, myself, and every client in the deliberate performance of a felony, which I was not willing to do.

Could you describe a case that exemplifies the healing potential of MDMA psychotherapy?

Ann: Before I describe such cases, I want to say a few things about MDMA, which is known as an "insight" drug. Taken at the psychotherapeutic dosage level of 100 mg to 125 mg, MDMA does two things simultaneously: it allow the patient insight into himself, while—in some manner we don't understand—putting him into a state of peaceful acceptance of whatever he may unearth. Along with this feeling of acceptance, there is usually a strong sense of appreciation, even love, for himself as a total human being, warts and all, and often a deep compassion for his helpless, traumatized childhood self. This ability to employ insight without fear or defensiveness usually takes six months or more in standard psychotherapy; yet it can be accomplished in one day with the help of MDMA. MDMA can be the great penicillin for the soul. MDMA therapy allows for clarity, a dropping of defenses, and a reestablishment of trust. It is tremendous for marital therapy. Sometimes the outcome of a couple's therapy is a firm decision that divorce is better than staying together. Of course, when we used MDMA or any other psychoactive material, the sessions were no longer fifty-five minutes; they'd become six hours minimum.

Let me describe two successful therapy cases. One of these was early on, during the first year of learning how to use this drug to help people. Or, to be more precise, how to help people help themselves.

This case involved a married couple who were good friends of ours. Their marriage had been in trouble for some time, with each of them attempting to prove the other wrong, in matters both great and minuscule. Hostility and defensiveness had made communication between them stilted and painful. In response to the tension in the home, their two boys were beginning to act out, adding to their parents feelings of guilt, shame, and anger.

These two much-loved friends came to Sasha and me for an MDMA session, both of them expressing hope for some way out of their entanglement. They sat facing us, at opposite ends of our long couch, and didn't look at each other for quite a while. After they consumed the MDMA, neither Sasha nor I did much work that afternoon. Our friends started talking to each other and they continued, gradually moving closer to each other, until—at the two-hour point—they were sitting side by side, holding hands.

MDMA is also known as the empathy drug. Along with acceptance of oneself and compassion for one's own past and present bewilderment

and pain, there comes an equally intense empathy and compassion for other human beings. Our friends rediscovered each other. Their defensiveness disappeared, and they remembered why they had fallen in love.

Within a month of this session, one of their sons was stricken with a fatal illness. The two parents later told us that without the healing of their relationship that day, they would not have had the strength and courage they needed for the struggle that faced them for more than two years, trying to save their son.

There was a second case I remember with some satisfaction—a woman in her thirties named Sheila, who suffered from chronic depression. Her parents lived half a continent away, but now and then, Sheila had to go home for the holidays. Whenever she did so, arguments erupted, and she became aware of a deep anger directed at her parents. She came to me, having heard about MDMA, because she had become worried about hurting her parents emotionally, without having any apparent reason for doing so. She could not understand her depression, since her life was reasonably fulfilling, and she could see that there were many pleasant things going on which should—she felt—make her happy. She told me that she knew several people whose lives were dreadfully difficult in comparison with her own yet, as she said, "They seem to be a lot more content than I am; they laugh more than I do. They aren't depressed! With all the good things I have in my life, why am I in such a sad state?"

We worked together for several months. Then one day, recalling her childhood, she said, "You know, I remember being happy. I remember being really happy, before I was eight years old. What could have happened to change me so much? After my eighth birthday, I wasn't happy any more." I asked some questions about memories of her parents when she was seven or eight, and after telling me that she couldn't remember anything in particular, she went silent for a moment, using the MDMA to open herself to impressions of that time. I kept quiet and waited.

Sheila sat up in her chair and said, "I do remember one thing my father said to me around that time. I guess I was running around like I usually did, having fun, maybe making too much noise. I don't know. Dad took me by the shoulders and told me that the only people who were *really* happy in this world were people who were going to die soon. He said the world was full of pain and sorrow, and the only happiness was in heaven, if you had been a good person. So if I felt happy all the time, maybe it meant I was going to die."

I could only respond, "Oh, my God!"

"Yeah," said Sheila, "He was a Catholic, and he believed in hell, and maybe he thought that would scare me into being quiet for a while. I don't know. But he shouldn't have said that, I really think he shouldn't have said it."

"You're damned right he shouldn't have said it!" I fumed, "That's child abuse, honey! No wonder you stopped being happy!"

She told me she still wasn't sure there was any connection. But she thought about the words, remembered the sudden fear, and slowly it all moved together into a certainty, and she began to cry.

For certain patients, MDMA can be a key to repressed memories. Sheila was unusual, in that she had been able to retrieve the actual words which had turned her young life dark and fearful. Most people have to pull strands of incomplete images from their unconscious: a mother's face shouting anger, a brother's malice, the damp hands of an uncle, none of them quite sufficient to explain what had gone wrong in their lives.

For Sheila, this session was the turning point. It took another two or three months of work before she was able to feel some pity for her now elderly father, instead of the customary anger. Very gradually, she allowed herself enjoyment, and even moments of real pleasure, without the old terror descending on her. The insight gained in her MDMA sessions served her well, and when we said good-bye, she was a lovely woman who smiled easily. Within six months, I heard that she was engaged to be married.

What are some basic "dos" and "don'ts" of how to structure an MDMA psychotherapy session?

Ann: If MDMA were legalized tomorrow, I would suggest that future therapists should keep in mind certain rules in conducting their sessions. I'll describe what I consider the most vital of these.

As the therapist, you should know as much as possible about your patient, before considering giving him (or her, of course) MDMA. You should ask for copies of his medical records. You must be familiar with all the published information on MDMA, and you should have taken the drug yourself, at least once.

A contract must be explained to the patient, and the patient must agree to it. The contract has three rules.

The first rule is that, although any and all feelings of hostility can be freely expressed in the session, the anger may not be physically acted out against me or my possessions. If the acting out of a traumatic event is needed, I will supply both the opportunity and the means. Otherwise,

anger and hate will not cross the line into physical action. (Many therapists have a room or space in which a patient can act out rage, tearing apart old sheets or pillows supplied by the therapist.)

The second rule is similar to the first, but it applies to sexual feelings. No matter what the fantasy or urges, you can and should talk about them, but no physical acting out is allowed.

Finally, you must agree that if an opportunity to go over the threshold into death presents itself in the trance state, and you are tempted for any reason to go, you are not to do so. To put it another way, you will not die on my time, in my house or my office, because your death would cause me harm, and you will not cause me harm, as I will not cause you harm. (The patient's unconscious mind will register the fact that, no matter what might happen during the session, there are rules that must be followed. There is a fuller explanation of this rule in our book *TIHKAL* on pages 225–26.)

A minimum of six hours should be set aside for a session with MDMA. This will allow sufficient time for either a single dose (usually 125 mg), or an initial dose followed ninety minutes later, by a supplement (usually 40 mg), if the patient so chooses. When the patient believes he has returned to baseline, his vision should be tested in a dark room, with a flashlight, to see if there are any tracers of light remaining. Such light tracers are indicative of the visual distortions that can accompany many psychedelics. He should not be allowed to drive himself home until there are no tracers seen. Ideally, the patient should stay overnight in the place where he had the MDMA, or he should take a taxi home, because there is always a possibility of his being distracted by post-session thoughts and reminiscences while driving.

The patient must be told that he has the right to change his mind at any time about taking the MDMA. If his intuition tells him that this is not, after all, the right time to use the drug, he must understand that his change of mind will be honored and respected.

Shifting the subject slightly, there are certain people who I think should never be given psychedelics, including MDMA, especially people who are psychotic. I think that the loss of the sense of self, or core self, which happens in psychosis, is a contraindication to these drugs. Psychedelics are not for people who are trying to *find* mental health. Rather, they are for people who are basically healthy and have strong cores. They are for people who are eager to explore themselves emotionally and spiritually,

and to explore further than ordinary psychotherapy is going to take them. That, of course, is not for everyone.

What other psychedelics do you think may be of potential value to psychiatry and medicine?

Sasha: Many psychedelics will be valuable as research tools. There are a number of compounds that effect subtle changes in the thought process or within the sensory system. And there are illnesses that have these changes as part of their symptomatology. An increased understanding of brain function could come from investigating how these drugs do their thing. Labeling them with radioactive tracers, and following their travels in the intact brain with tools such as the PET scanner, could eventually lead to creating medicines to relieve pathological symptoms—and from this, to eventual cures for mental illness.

Are there any compounds that you have not investigated, which you would like to subject to rigorous examination?

Sasha: Oh my, yes! Many of them. I have synthesized a form of an interesting tryptamine with fourteen deuterium atoms (heavy hydrogen atoms) on it. Will it be different than the nondeuterated counterpart?

There are tempting locations in several active compounds where a perfluorinated methyl or ethyl group could be easily placed, with totally unpredictable consequences. There are also several cacti that I have explored that are rich in new alkaloids, none of them known to be psychoactive in man, and yet the total plant extracts are indeed active! Is there a minor component that is tremendously potent, or is it some combination of components that does the job? There are many unanswered questions and, as is usually the case, finding the answers will lead to yet more questions.

Have you examined salvinorin A, the active diterpenoid compound from the plant Salvia divinorum*? Is there anything particularly intriguing about this compound?*

Sasha: My experience with salvinorin A has been quite limited. I observed a session when the isolate was being smoked, and its potency and the rapidity of action were most impressive. Less than one milligram of the pure white chemical was quite sufficient to produce an intense experience. To me, what is most intriguing about this compound is its complex and potentially fragile structure. It is not an alkaloid (there is no nitrogen atom present), and it has a three-dimensional structure that is a treasure of asymmetry. Seven of its two dozen or so carbon atoms are chiral and so

there are, in theory, 128 isomers that could exist. And just one of them is the actual salvinorin A itself. What a rich area for future exploration!

What are your views on plant psychedelics versus their isolated or synthesized alkaloids? For example, "magic mushrooms" versus pure psilocybin? Are the experiences they induce identical or are there substantial differences?

Sasha: No two experiences are really ever the same. That holds whether the chemicals are from an intact plant, its isolate, or a synthesized chemical that is presumed to be responsible for the activity.

With the whole plant, there may also be questions about properly identifying it. And certainly there would be questions related to potency and stability, which in turn could be related to whatever manner of preparation it went through before it was consumed. Even though a mushroom or a cactus closely resembles some prototype model, it may actually be a subtle botanical variation that is new to you. And even when you have accurately identified the plant, its alkaloid composition can vary depending on the season or the growing conditions. Thus, what is consumed may be a mixture of many compounds in unknown proportions.

The purified isolate, or even better a synthetic sample, has the intrinsic virtue of being of known identity and purity. However, your physical and mental state today is going to be different from what it was the last time you tried this compound, and hence the experience will be different. There is truth in the old saying, that you cannot cross the same river two times.

Is there anything particularly interesting or unique about ayahuasca?

Sasha: Ayahuasca adds yet further complications to the "plant versus compound" question, in that it is usually not made from just a single plant, but from a combination of plants. The components used in the preparation are variable, and the recipe followed can be quite different from one cook to another. Although the active ingredients are classically assumed to be plants that provide a mixture of *N,N*-dimethyltryptamine (DMT) and harmaline, I have seen active ayahuasca drinks that do not contain either compound. So it is not surprising that one's experiences can be quite variable. But even on occasions where a single, uniform brew is shared amongst several individuals, responses can vary from the dull and boring to the extreme and frightening.

In all of your years of laboratory and personal explorations, what is the most interesting compound you have examined?

Sasha: I would put 2,5–dimethoxy-4–ethylphenethylamine (2C-E) very high on this list. It allowed two opposite energies to blend together

in, for me, a new and unique way. On one hand, it took complete control over me, in that it presented visions, or thought trails, or memories, that could not be ignored. "Do not move on from this place until you have resolved the questions that have come up or resolved the problem now at hand." Once this was all completed, I could move on to the next scene. And yet, at the same time, I had complete control over it. The answers and conclusions were totally my own. It was a rich day, although exhausting, as it seemed as if it would never end. But I did not want it to end. There were many facets, many nuances, and a totally clear recall of all that went on. An interesting compound.

Projecting into the future, are you optimistic or pessimistic-that MDMA and psychedelics may be accepted in the future as sanctioned treatments for psychiatric and medical illness?

Sasha: For the near future my pessimism outweighs my optimism. The outrageous War on Drugs has become firmly ensconced in our political and economic world, and there is no incentive to soften it. In fact, all prospective changes are directed to making it more encompassing and more penalizing. It has now been conjoined with another unwinnable war, the War on Terrorism, into an Orwellian structure that seems pretty permanent.

Ann: I, on the other hand, remain optimistic. Perhaps positive change will not occur soon in the United States, as Sasha points out. But I believe there may be a greater chance of making progress in Europe and elsewhere.

Do you have any final statements you'd like to pass down to the younger generation?

Sasha: Stay curious.

Ann: And know yourself as well as you possibly can, by whatever means you choose.