



# MAPS

Bulletin of the Multidisciplinary Association for Psychedelic Studies

## LETTER FROM THE EDITOR...



### endings and beginnings have characterized

**Spring 2000.** The death, from brain cancer, of beloved writer and psychedelic figurehead Terence

McKenna saddened all who loved him and were inspired by him. (p. 6) ■ As Summer overtakes us, MAPS' staff is changing. After many months of writing his dissertation, Rick Doblin will once again be focusing full-time on MAPS. Rick has kept up his incredible pace throughout the final stages of his Ph.D. work. He will turn his attention to fundraising for three main studies needing immediate support. The first is the MDMA-assisted therapy study in Spain, with women survivors of sexual assault. The Spanish research team has been joined by an American therapist experienced with MDMA in the treatment of post-traumatic stress disorder associated with rape. (p. 2) The second study, investigating psilocybin in the treatment of obsessive-compulsive disorder, has received FDA approval. MAPS is purchasing the psilocybin for this project. (p. 2) The third study looks into the effectiveness of vaporizers in delivering cannabinoids from whole cannabis. It will be co-sponsored with California NORML.

■ I am leaving my position as MAPS' Communications Director to move to California. As a west-coast liaison for MAPS, I'll continue to manage the MAPS website and co-edit with Jon Hanna the upcoming Creativity issue of the *MAPS Bulletin*. On August 1, I begin working with DanceSafe, a national organization promoting health and safety in the rave and dance club community. MAPS has been DanceSafe's fiscal sponsor as it applies for its 501(c)(3) non-profit status. Both organizations collaborate in sponsoring the Ecstasy pill testing project, which tests pills for free (this project was made possible in part by a grant from Promind Foundation). My work at DanceSafe will be similar in nature to what I've done for MAPS, but in some ways I feel like I'm going out of the frying pan into the fire. MAPS' work, although controversial, is less controversial than harm reduction. During this time of media frenzy over raves and dance drugs (p. 2 & 10) and corresponding bills in Congress, that fact is clear. When I started at MAPS in 1993, I knew nothing about the therapeutic application of psychedelics and marijuana, much less drug policy reform. I've spent my 20s learning about our society's love-hate relationship with psychoactive drugs, and the challenges we face in demarcating individual and societal responsibilities regarding them. Now this work is taking me West, to a state considered a crucible for many progressive ideas. Maggie Hall, long-time friend of MAPS, is learning the details of daily operations at MAPS, and will be replacing me in July.

■ This issue includes a follow-up to the 1997 MAPS article, "Ethical Care in Psychedelic Work," by Kylea Taylor. The author of this follow-up, Gary Fisher, Ph.D., shares his perspective on the responsibilities of the sitter during psychedelic therapy sessions. (p. 4) On page 10 is a list of all the new pages on the recently revised MAPS website. We are trying to make it more user-friendly and easily navigable. There are also short video clips from the 1999 MDMA conference held in Israel that can now be viewed on the site. An impromptu qualitative survey of 2C-T-7 users (p. 11) and a review of the "T2K" Toward a Science of Consciousness conference (p. 14) finish out this issue.

■ With renewed energy, our office continues its effort to support research projects that take so many years to develop and start. During this time of endings and beginnings, we are grateful for the support for MAPS that we know runs deep among its members. Sylvia Thyssen, *MAPS Bulletin* Editor

## MAPS Research Update

### **MDMA/PTSD therapy study poised to begin in Spain**

The Spanish research team has been joined by an American therapist experienced with MDMA in the treatment of post-traumatic stress disorder associated with rape. Marcela Ot'alora Roselli, bi-lingual therapist-in-training, currently lives in Boulder and is working on a masters degree at the Naropa Institute. Marcela decided to become professionally involved in MDMA therapy due to the contribution that MDMA therapy made to her own recovery from rape-associated PTSD. You can read her personal account on the MAPS website at [www.maps.org/research/mdma/marcela.html](http://www.maps.org/research/mdma/marcela.html). The projected cost of this study is \$54,000 to \$63,000. Nearly half of this amount has already been donated to MAPS by members.

We continue to seek additional support for this effort. Donors will be contributing to the first controlled study of the therapeutic use of MDMA ever conducted. For current updates on the MAPS website see [www.maps.org/research/mdma/spain/mdmaspain.html](http://www.maps.org/research/mdma/spain/mdmaspain.html).

### **Psilocybin in the treatment of obsessive-compulsive disorder**

In May, MAPS sent a check for \$10,527 to the University of Arizona Department of Psychiatry, to pay for the psilocybin for this historic study. Producing the psilocybin will probably take two to three months, then the study can begin. The research protocol and informed consent form are available on the MAPS website at [www.maps.org/news/1099news.html](http://www.maps.org/news/1099news.html).

This is the first FDA-approved study in over 25 years to examine the use of psilocybin in a patient population. The principal investigators, Dr. Pedro Delgado and Dr. Francisco Moreno, plan to study the use of psilocybin in ten patients suffering from obsessive-compulsive disorder (OCD). They want to determine if they can replicate in a clinical study several published case reports of patients whose OCD symptoms were reduced after self-experimentation with psilocybin mushrooms.

### **Review and summary of over 700 scientific papers on MDMA**

Matt Baggott and associates are nearing completion of a MAPS-funded major review of over 700 scientific papers comprising all peer-reviewed articles reporting on basic and clinical research with MDMA. The review will be submitted to the FDA in conjunction with the MDMA research protocol being planned at Harbor-UCLA Hospital under the supervision of Dr. Charles Grob. The review will also be submitted to the Israeli Ministry of Health as part of the application for the MDMA/PTSD study in Israel.

### **German study of MDMA users published**

At the MAPS symposium "Clinical Research with MDMA and MDE" held in Israel August 30-September 1, 1999, Dr. Efi Gouzoulis-Mayfrank presented data from a study comparing MDMA-using ravers with two control groups, one with subjects who had used cannabis but not MDMA and another with control subjects who did not use drugs. The mean estimated cumulative total dose of the MDMA-using group was 93 pills, the mean duration of regular use was 27 months.

Differences found were in certain subsets of memory and executive functions, with the MDMA-using group performing somewhat lower. These differences were statistically significant but clinically insignificant, meaning that neither the subjects nor the testers could tell the groups apart in normal social situations and the MDMA users' scores were still within the normal range.

Dr. Gouzoulis-Mayfrank's study was recently published in the *Journal of Neurology, Neurosurgery and Psychiatry*. The results

have been sensationalized in the press with headlines such as "Study suggests even light use of Ecstasy might dull intelligence."

The memory findings in the studies of Drs. Bolla, Ricaurte and McCann are also statistically significant but clinically insignificant (*MAPS Bulletin* Vol. IX 3:6-8). Possibly confounding any causal role of MDMA in the memory findings is that these studies may be measuring effects of the Ecstasy raver lifestyle (lack of sleep, in some cases use of other drugs not matched by the control groups) or of possible preexisting factors such as subclinical depression and/or anxiety. However, the study of Dr. Gouzoulis-Mayfrank included no unusually heavy or poly-drug users.

As of yet, no study shows that one or a few doses of MDMA in a clinical research context results in any functional or behavioral consequences from possible neurotoxicity. Alex Gamma, Ph.D. candidate, University of Zürich, is reviewing all studies of MDMA and memory for a subsequent issue of the *MAPS Bulletin*. There is more that can be said about this topic, but we can't remember what it is.

### **MDMA study in Israel progressing as hoped**

Protocol development for the \$50,000 post-traumatic stress disorder study that MAPS is working to start at Ben Gurion University of the Negev is still underway. We hope to submit it for review to the Israeli Ministry of Health before the end of the year.

## Ayahuasca research in Spain

The ayahuasca research effort we described in a previous *MAPS Bulletin* article has been progressing slowly but surely. Obtaining ayahuasca was the first difficulty we encountered, but thanks to the help of several people we are indebted to, we were kindly sent two 10 litre batches of ayahuasca by CEFLURIS in Brazil. Our ayahuasca (Santo Daime) batches were freeze-dried and analyzed for beta-carboline and DMT contents. The former were determined at our HPLC facilities, while the latter was quantified by James C. Callaway in Finland. We would also like to express our gratitude to him. Once this was done, freeze-dried ayahuasca was encapsulated in gelatin capsules. The handling of the freeze-dried material was another unexpected difficulty, as the material proved extremely hygroscopic even within an environment controlled for humidity. This complicated the manipulation of the powder, which was done in special plastic bags under dry nitrogen, and the storage of the prepared capsules, which have since been kept in a freezer at -20 °C under dry nitrogen and protected from light.

### Dosing subjects

Once we finally had the capsules ready, we began interviewing a number of local (Barcelona) ayahuasca users. We selected a group of six healthy male volunteers with previous experience with the tea, in order to conduct a

pilot study. Even though we had first considered using 0.5 and 0.8 mg DMT/kg body weight doses, we decided to conduct a pilot study with three ayahuasca doses, containing respectively 0.5, 0.75 and 1.0 mg DMT/kg body weight. We administered the ayahuasca in a single-blind dose-escalating design. That is, subjects were told they would receive the doses in a randomized order. The investigator knew which doses were being given on each experimental day. They actually received the placebo on the first session, the lower dose on the second, the medium dose on the third and the higher dose on the fourth day of participation. This was done for safety reasons, in order to control for possible adverse reaction in the more stressing environment of a research lab. In this first pilot study the following measures were conducted: subjective effects were recorded by means of visual analogue scales (VAS), the Hallucinogen Rating Scale (HRS) and the Addiction Research Center Inventory (ARCI), a standard questionnaire used in the clinical evaluation of psychoactive drugs. Additionally, preliminary data on the prepulse inhibition of the startle response and the P50 event-related potential (both putative measures of sensorimotor gating) were also obtained.

After completion of the pilot study we analyzed the subjective reports and recorded cardiovascular

measures. We are presently preparing a paper discussing the subjective effects reported by the subjects and the results of the preliminary tolerability analyses (cardiovascular measures, results from the biochemical and hematological determinations conducted after each experimental session). The pilot study developed without major problems, but one subject decided to withdraw after the second session, so we finished with only five volunteers. When the subjects were asked which doses they believed they had been given on each session, one subject mistook the lower dose with placebo. On the other hand, the higher dose was considered by all the remaining five participants as eliciting excessively intense effects. We decided thus to use a 0.6 DMT/kg body weight dose, that is a dose between the lower and medium doses of the pilot study, as the lower dose in the larger double blind study. As the higher dose of the final study, 0.85 mg DMT/kg body weight was chosen, between the medium and the higher doses administered in the pilot study. So the final ayahuasca doses employed were slightly different from those we reported in the *MAPS* article.

The experimental (clinical) part of the final double-blind trial is almost complete. Finding volunteers with experience in hallucinogen use and meeting the inclusion criteria set in the study protocol proved difficult. As many as 90 subjects

reached the psychiatric interview stage, but a large number were excluded later for minor physical health problems or decided not to participate when they were told they would have to spend ten hours in the lab on four different days, if they entered the study. In the end, we have been able to include 18 volunteers as we had planned. As we described in the *MAPS Bulletin*, the final double-blind trial included a large number of study variables: the performance of 30 lead EEG recordings, blood sampling, urine collection, etc. at different time points. We also incorporated the PPI and P50 measures mentioned above, which were not ready at our lab until some time after we wrote the *MAPS* article. This has all been a considerable amount of work, but it is now done and the prospect of soon beginning to analyze the data gathered is again stimulating.

### New study

As a final comment, we have now started working on a SPECT protocol in which ayahuasca will again be the center of our investigations. Before the protocol is sent to the Ethics Committee, we will concentrate on analyzing and publishing the data of the present study. This will doubtlessly facilitate the approval of a new ayahuasca project by the authorities.

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—Jordi Riba (jriba@santpau.es) and Manel J. Barbanjo, MD, Ph.D.

# Counter-Transference Issues in Psychedelic Psychotherapy

Gary Fisher, Ph.D.

**IN A 1997 MAPS Bulletin article,** Kylea Taylor addressed the unique circumstances that arise for the psychedelic psychotherapist (the sitter). She adequately described the special needs of the psychedelic voyager (the client) which need not be repeated here. This note is to further elucidate the counter-transference issues in the psychedelic therapy setting and to offer some procedural considerations for its effective management.

We assume that the sitter has done extensive psychedelic work himself but that he is not yet perfect! He is extremely vulnerable in this circumstance as he cannot avoid "being seen" by the client. When the client enters into a state of clarity (transcendent consciousness) he sees all phenomena as they truly are. When the client reaches a state of grace (eternal bliss, nirvana) this does not present a problem to the sitter as the client, in that state, embraces all with complete love and acceptance. He does not just accept those aspects of the self that the sitter experiences as egosyntonic but accepts, with unconditional love, the total "soul condition" of the sitter. However, in any other altered state of awareness, a circularity phenomenon can occur.

## **Self-acceptance of the sitter**

The psychedelic voyager, because of his heightened state of suggestibility can "join" the sitter in the sitter's own self rejection. This phenomenon—a collusion, as it were—of rejection of aspects of the sitter will activate the sitter's awareness of his own (self-judged) deficiencies and he will experience the client's rejection of him. This triggers counter-transference in the sitter who then rejects the client for rejecting him. All of this happens simultaneously without the sitter having the opportunity to process the sequence of events. Naturally the extent to which the sitter has achieved the state of self-acceptance, the less vulnerable he feels, for he is less threatened and consequently can be more useful to the client.

When an individual sits in a state of total self-acceptance he automatically accepts everyone else without reservations. Conversely the extent to which one holds reservations about another's acceptability is the extent to which one automatically rejects the other. This too is immediately experienced. The extent to which one, in actuality, loves another is simply a reflection of one's own ability to love oneself. These observations are of course clichés in new age philosophy. The difficulty is the

It is MAPS' mission to make psychedelic therapy possible by developing clinical studies designed to test its effectiveness...

discrepancy between experiencing these phenomena and having intellectual beliefs about them. The greatest obstacle to knowing something is to think you know it before you actually have the experience of the phenomenon. I distinctly remember the first occasion when I experienced the phenomenon "God is love." I had believed this for many years, thought I knew what it meant, but when I

actually experienced it I was awestruck and heard myself quietly murmur "Oh, is that what that means."

All of the phenomena that occur in psychedelic psychotherapy also occur in "ordinary reality" psychotherapy, it is just that in psychedelic psychotherapy these phenomena have the opportunity of being conscious to all participants in the setting. The effects, however, of these phenomena are equally relevant and influential in ordinary psychotherapy.

## **Sitters' meeting before a session**

The procedure which is most helpful is for the sitters to meet together the day before the session and discuss the counter-transference issues. In my work as a psychedelic therapist we generally had from three to five sitters depending on the anticipated difficulties with the physical and emotional management of the client. It is important that all the sitters meet with the client prior to the session to do preparatory work for his session. This preparatory work is for both the client and the sitters. Preparatory work for the client entails examining notions as to the nature of the psychedelic experiences (fears, hopes and aspirations) and the development of a clarity of his intentions, i.e. the "set." For most individuals we would spend about six hours for this preparation work and the session itself (since we used relatively high dosages of LSD—from 400 to 600 micrograms) would last from eight to eighteen hours. From these preliminary meetings the sitters develop a decent idea of their counter-transference issues and the staff meeting is to focus on these issues. The subtlety of this process is quite amazing. During this meeting it is productive to uncover what "agendas" each sitter has for the client. Any time we have an agenda for someone it always means we are not accepting them as they are in present-time state. For example, if an individual is obese, don't we want them to lose weight? Wouldn't they be happier and feel better about themselves and wouldn't their bodies be under less stress if they lost weight? Regardless of the "realities and niceties" of our agendas, the result is that we are not accepting the individual as he is in his "as is" state. In this psychic act we

are joining the client in their own self rejection and confirming for them they are not acceptable "as is." One of the most potent elements in effecting a shift in an individual's experience of himself is to have the experience of being totally accepted by another.

#### **Unexpected therapeutic effect**

As therapists we are not always aware of how our patients experience us and what we think is therapeutic may be different from what they experience as being therapeutic. Working with an extremely brilliant young woman one day in a session I became suddenly aware of my own voice bouncing back at me as in an echo chamber. I looked at her and she was sitting there beaming and smiling at me. I was a bit taken back and asked her if she had been listening to me and she readily said, "Oh no, I never listen to what you say, it doesn't make any difference to me what you say—I just like to be with you."

I once treated a male adolescent schizophrenic who taught me to be completely still and silent. It took me about six or seven sessions to catch on and my conflict about just being quiet drove me almost insane. Finally I was able to achieve the state and just sat quietly and was with him with neither of us talking. We spent about twenty months "working" in this way. Near the conclusion of this time, at the end of a session, he spoke and told me how meaningful being with me had been to him and he certainly appreciated everything I had done for him and this was all he said and he left. I found out later that he had become completely functional, was attending graduate school and eventually became a professor of music, married, had children and led a very productive and meaningful life. So as Carl Rodgers said many years ago, we need to become "client centered."

#### **Resolving counter-transference**

During the sitters meeting, it is usually decided who the "lead sitter" should be. This is usually self-selected according to an intuitive sense of a "good fit." Obviously the operative concept during the session is flexibility and other sitters interact as they deem appropriate.

During this meeting if any sitter felt his counter-transference to be too difficult then he could either opt out of the session or else have a mini-session himself to determine the source of the difficulty and to resolve it. Prior to the client's arrival on the morning of the session the sitters would gather early and have a group meditation. Sometimes it is appropriate for the lead sitter to take a low dose of a psychedelic to become "stabilized" in an

...It will be enriched by the work of therapists like Fisher who used psychedelics with clients in the 50s and 60s.

ego-free state where he is most receptive to tracking the voyage of the client. It is not that he is going to actively direct the client, but that he is in a state of consciousness where he can transcend his own ego boundaries and know the consciousness of the client. Of course flexibility is again important because any sitter can spontaneously develop an intense "contact high" and transcend into an altered state. This will often happen very quickly without the sitters "catching" the transition period. Sometimes a sitter is not "stabilized" and goes on his own voyage and is not available to the client.

The variety of experiences that can occur is limitless and that is one reason for having a number of sitters in the session. In the early days of our work when we had a psychotherapist wanting to understand the world of a schizophrenic we would simply suggest the psychotherapist take the psychedelic and sit with a schizophrenic patient. Typically another experienced sitter would be with the psychotherapist to help him in his navigation into this new world of experience. In our work with schizophrenic and autistic children (Fisher, 1997) we were amazed at how perceptive were the comments of these children concerning staff when we had assumed that they were much too regressed and disturbed to be aware of our faults, foibles and imperfections. Of course there is a good deal of folklore concerning the insightfulness of the schizophrenic into the condition of the therapist's soul. Fortunately for us, our child patients were very accepting of us and used great humor and compassion in pointing out our own "troubles."

In brief summary, for a sitter to be helpful to a client, he must have travelled his own path with careful diligence and have arrived at a state of compassion for himself and others that gives him knowledge that we are all here to help one another in our own search for our own truth. •

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*In 1984, Terence's enthusiastic preference for plants over synthetic drugs led him to challenge the safety of MDMA at an Esalen conference on psychedelics. As a result of this, I was motivated to help initiate the first safety study with MDMA. Though we disagreed on the relative risks and benefits of plants and synthetic drugs, we shared a similar love and appreciation for the experiences these substances initiated. Terence's vision to co-organize the 1999 AllChemical Arts conference on psychedelics and creativity was a bold step toward promoting the importance of psychedelics. MAPS' next issue on psychedelics and creativity was inspired by Terence's leadership.*

*In his too-short life, he moved mountains.*

—Rick Doblin, MAPS President

## Terence McKenna Speaks...

**Interview by Jon Hanna and Sylvia Thyssen  
at the 1999 AllChemical Arts Conference, Kona Coast, Hawaii**

*Terence was a primary reason for our being in Hawaii. The AllChemical Arts conference, which focused on the influence of psychedelics on the art community, was conceived of—in part—by Terence, who along with Ken Symington and Manuel Torres produced the event. But more than a simple shared love of art, it was also our concern for Terence's health that brought us to the island, alongside the knowledge that this might-well be the last time that we had to spend with him.*

*We were a bit surprised to find, for all intents and purposes, the same old Terence. To look at him, and to listen to him, one would have had little idea that there was a tumor eating away at his brain. A long introductory rap and the traditional question and answer period kicked off the first official day of the gathering. It was clear*

*that Terence had held onto his wit, and his ability to mesmerize an audience with another one of his well-crafted, improvisational, meandering monologues—a McKenna hallmark. Throughout the week of the event, at other talks and over meals, it also became clear that Terence had not given up. He was still probing the depths, asking questions and seeking to understand what was happening.*

*Always generous with his time, even when it became obvious that it may be slipping away, Terence was happy to do an interview. On a sunny day we sat on the green hills looking over the ocean, and spoke of his condition, the potential state of non-existence known as "death," and of course, psychedelics and art. We are thankful for the time we had.*

— Jon Hanna &  
Sylvia Thyssen

Sylvia: Certainly we wanted to ask you first off about the experience you've been through lately with your brain tumor; how that's affected you, and how you feel about it.

Terence: Well, it's been an experience. It's not yet defined, so that makes it a little difficult to judge. I mean, is it the bad summer of '99, or is it the end of everything? And it won't be clear for a while. It was bad enough as "the bad summer of '99." The good news is that I discovered I don't really think that I'm afraid of death, which I assumed I would be. I am a little concerned about dying, and would like to get a little more clear just what's involved in that. It's a huge inconvenience, I have to say...

Jon: Do you feel as though your experiences with entheogens have prepared you, or paved the way for an attitude that lacks the fear when facing death?

Terence: I assume that must be it. I assume it must be spending so much time in those psychedelic places. The way I think of it, is that the analogy is to physics. I mean biological death is the black hole for organisms. All it means is, you know, when you go into that black hole, no information can be sent back. There is no way of judging what actually happens. Every culture on earth has assumed some kind of survival after death in some form. I don't particularly assume that. On the other hand, given that people exist in this world, embodied, anything could be possible. And these deeper psychedelic cultures—you know the Mayan, Tibetan, and so forth—seem to come up with the data that we should assume this kind of survival after death. But to imagine it in any way is pretty difficult. Maybe life is some kind of distillation through higher dimensions. But it certainly is... we are certainly three-





dimensional, and it's very hard to imagine us as two-dimensional beings, with a space/time that's three-dimensional...

But, I would assume that most psychedelic people, being told they had six to nine months to live, would behave pretty much as I have behaved. I mean, what else? What are you going to do? You can't rant and rail. There are different things to be done on this side. What should you do? Should you do everything that you always wanted to do and didn't do? So that means I should be flying to Florida to see a shuttle launch, on my way to see the great pyramids, on my way to Ireland, on my way to somewhere else? Or do you want to become a cure chaser, flying to the arms of John of God in São Paulo, who does psychic surgery on 14,000 people a day? Or do you just want to go home and do "why meism?" And one thing I have learned, or I'm learning—I think I'm learning it—is that your life is not a story. So when something like this happens to you, it's kind of futile to go back through your life and ask, "What did I do wrong? Was it playing with the asbestos dust in the construction yard? Was it the carbon tetrachloride used to kill the butterflies? Was it daily Cannabis for 28 years?" (laughs)

Jon: Your last point is something that one person on the 'net brought up to me, when discussing your situation. He asked, "Geeze, you don't think that it was the psychedelic drugs that Terence used, do you?" And it just doesn't really seem like it would be to me. There doesn't seem to be any indication that would point to that. Otherwise there would be a whole lot more of us with brain tumors.

Terence: When I got with these cancer doctors I said,

"Look, if you want to guilt-trip me, that's fine. What about the drugs?" And they all said, "No! Oh my God, what an idea! Inconceivable!" And I also asked, "Well, what about a lifelong history of severe migraine headaches?" Again, "Nothing whatsoever to do with it." I don't believe this about the migraines. I think anybody who had migraines as bad as I did for as long as I did... it had to have something to do with it. But then, you know, people who don't like drugs, or intellectuals, or troublemakers, can look at my situation and say, "Well, look at what happened to this guy? This is a perfect example of God's retribution striking somebody down." If you want to believe it, believe it.

It is ironic... I mean brain cancer of all things. Because I used to think about, what was my fear about how I related to my career? What was the worst thing that could happen? And I always thought that the worst thing that could happen would be to go nuts. And then people would say, "Whoa, you know this guy McKenna, the mushroom guy. You know what happened to him? He's been in a back ward for several years now." My situation now is worse; this is considerable orders of magnitude worse!

But then there's the possibility that I'll live. Which would then be viewed by a number of different people different ways. It has some political implication—very small political implication...

You know, you don't hear the word "cancer," but that you hear the word "miracle." It's like "wife beating" and "alcohol," it's like "circuses" and "lions." It just all goes together. And being told the moment of your own death, or the rough moment of three to six months, is pretty interesting. I mean very few people have that opportunity here, whatever it is. To mentally pack your bags, and say, "Well, hmm..." And also to contemplate non-entity. I always assumed that my death would come in some horrible ten minutes on a freeway somewhere, and it would be complete chaos, and horrible agony, and then the final darkness, and it would be brief. Quick. No time to call lawyers, no time to reread Heidegger, or anything like that. Apparently, maybe not. Anyway, if I go through this and then I don't die, it is like a permanent high. It is like, "Wow, does this shit turn on the lights." It just turns on the lights. And these cancer doctors are unrelenting. They just look you straight in the eye, and they say, "No one escapes." That's what the guy said to me, he said, "No one escapes."

Jon: It makes me think of something that Christian Rätsch said about the diagnosis of HIV/AIDS being a sort of voodoo death curse. When someone is said to have AIDS, that's it. And it's almost like the performance of a psychological magic that kills any chance for the person to postpone their death, or to get well. I think that a sick person has to accept the possibility that it is going to

happen, but they don't have to accept the inevitability that it is going to happen. So the way that you describe the message given by the doctors is...

Terence: Well, I suppose that they tell them in medical school, "Don't raise false hope. Cover your ass. And if a disease is incurable, tell them that it's incurable." And it's such an imprecise thing, disease. All spun around diet and attitude. But it has been very, very interesting. And what you become for other people. You become an object of fascination. There's some kind of power in dying, or walking around with a death sentence. And I'm sure going to get to find what kind of power it is.

Jon: Do you feel as though there are written works that you need to complete? I know that you had been working on a book with another author...

Terence: Yeah. Well, I have books ready to go. But, you know I'm very realistic. And I suppose these things will get published in time. But, there's a lot of younger people coming up, and I'm glad for it. I mean people like yourself. And, the Lycaenum people. And all you guys at MAPS. I think, if no more of Terence McKenna were published or recorded, there's plenty of Terence McKenna out there. It would be good for my children to get a little more of this into the market. But do I feel cut off in mid spiel? No, I don't feel cut off in mid spiel. It's good to rotate the spokesman, or spokespeople, every once in a while. And I think that this whole thing is changing. I'm not sure that it is an entirely happy story. But Europe will shame the United States into better drug laws. And, there are just too many loopholes. *Salvia divinorum* is a certain kind of loophole. Ayahuasca is a different sort of loophole. GHB is a kind of loophole. There are just so many.

Jon: And it's a constantly shifting landscape, because as soon as something is scheduled, the people interested in these drugs move one step ahead by responding to the new laws. Unless they make everything illegal, a point that we may be coming to...

Terence: Yeah, right.

Sylvia: They haven't made art illegal. Which makes me want to shift this conversation a little bit. Tell us one delightful thing for yourself that has resulted from the AllChemical Arts Conference.

Terence: Well, I'm very keen for these Active Worlds, these virtual walk-around pieces of art. [see [www.activeworlds.com](http://www.activeworlds.com) for more information on this technology, and surf the links at [www.digitalspace.com](http://www.digitalspace.com) for more about the virtual AllChemical Arts Conference gallery.] I always said that virtual reality could be a

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technology for sharing the inside of our heads, and that's what we have not had. If we could show the power of these hallucinatory states as they actually are, the argument would be over. And so in a way it's interesting. It's a challenge to us, to use the animation tools and the scripting tools, to be as good as we say we can be. And so its no more of a hassle with the establishment. It actually lays the obligation back on the artist. And if artists would rise to that challenge, I think incredible art would begin. Transcendent art worthy of the name could be created.

Jon: With my own visions, the only kind of medium that they could be completely conveyed with would be the computer. The only parallel that there is, is computer animation, which sometimes is already so much like these visions, and could be even more so. So it really is an amazing tool.

Terence: That Active World, "Pollen," that we were looking at. There should be an effort out of our community to get together a core group of designers, animators, texture-mapping people, and just build. And build a psychedelic world where that's the charter, "This world is psychedelic. This world is for psychedelic people." And it's probably just a matter of suggesting it in the conference room here today to get it going, at this point.

The thing about drugs that will, I think, finally bring them to the surface and defeat the establishment, is that they're such a splendid way to make money. The corporations will never let that slip. The pharmaceutical industry is so huge, and so powerful, and eyeing the psychoactive market with such interest, because the stuff that's been done with the



serotonergic re-uptake inhibitors is edging into that area. You know, suddenly shyness is a treatable psychiatric disorder.

Jon: Sure. An additional area of note is nootropics; there's a growing interest in improving cognitive functioning through chemistry. And then the other one that seems to be a very promising sign for those sharing our area of interest is Viagra®, what with Bob Dole on television promoting what keeps him up. Here's something that is entirely related to pleasure. A drug that is allowing people to have pleasure. Although it is treating a specific dysfunction, a "legitimate" pleasure drug is something that's almost unheard of in our society, other than alcohol.

Terence: You're right. That's changed the dialog. That's really a watershed product. In fact, other companies are furiously trying to produce their own "Viagra."

Jon: And faster-acting forms.

Terence: Right. And there will be orgasm enhancers. And there will be memory enhancers. All of this will come, but incrementally. And governments will probably just have to stand back before big capitalism, and let it happen.

Jon: Getting back to the topic of death, and also psychedelic states of mind. One of the things that a lot of people report in psychedelic states are "past life regression" experiences. And one thing that I was thinking related to these states of mind—and something that you've commented on—is that they seem like they are specific spaces. And not something that one would think of creating in one's mind by their own volition. Especially the states that one enters with DMT. When I'm in that state, it is hard to accept that my mind is fabricating what I am seeing. It is almost like I am really visiting some other place. Like the DMT has opened a portal to this other place, an other dimension. Being embodied in the physical realm here—where we feel so connected to material, concrete reality—it is hard for us to comprehend that these mental spaces may have their own reality, divorced from the viewer. But perhaps these other realms that we are visiting are also physical in some manner for those beings "living" in that "dimension."

Terence: Well, they're informational. I think information theory has a future. In other words, what's real is what can pass a certain set of criteria for real. And if it can pass those criteria, it is real. And the rest is just philosophical quibbling. You know in that poem by Yeats, speaking of death, he says:

*Once out of nature I shall never take  
My bodily form from any natural thing,  
But such a form as Grecian goldsmiths make  
Of hammered gold and gold enameling  
To keep a drowsy Emperor awake;  
Or set upon a golden bough to sing  
To lords and ladies of Byzantium*

*Of what is past, or passing, or to come.*

In other words, a machine—a little bird. A thing of gold and gold enameling. And before I got sick, I assumed that sometime in the next 30 years I would download myself into some kind of form of immortality. I mean I think that's what the whole hullabaloo is about—some kind of immortality. It may be that tasteful people won't want it. But how many tasteful people do you know? Everybody else will be trampling the furniture to get to it. And the human experience is infinitely redefinable through human interaction with technology. And this has been going on slowly, glacially slowly for millennia. But now it's just in your face. It's explicate.

This illness is such a weird thing to take on board. I never was a morbid person, and I always had a kind of a... well, I haven't spent much time being sick in my life. And then this has such a paradoxical aspect to it, because... well, I have dizzy spells, but I don't feel like I'm dying for Christ's sake. That's crazy. I feel largely pretty healthy, and because I'm paying more attention to my health than ever before, I probably am healthier.

Jon: Have you cut back dramatically on any type of drug use?

Terence: At first I cut back on Cannabis, because it seemed to trigger the seizures. But then I easily got that corrected. Now I'm smoking as much dope as I ever did. I haven't been taking ayahuasca, because the vomiting reflex is too scary in terms of the brain seizure reflex. They're really closely related. So I've been taking psilocybin. We happen to have some actual pure psilocybin, not mushrooms. And it's great. So I guess the answer is no. I want to probe into it, I want to understand it. I mean obviously, death is a very big deal.

Jon: My father recently died suddenly related to complications from blood thinner given to him for a heart attack. It caused his brain to bleed-out, and he was diagnosed as brain dead. This occurred over a two-day period. He was still there, but his brain was gone. So as a comparison, in one way the situation that you're in is wonderful, in that it allows a grace period for you to accomplish some of the things that you want to get done. Do you feel as though it has had a strong effect on your personal interactions with others?

Terence: Oh yeah, that is mostly what it's about. Is seeing... if you can forgive, you can forget. And there's a lot of forgiving and forgetting to do. Yeah, that's the grace of it, is that you can actually arrange, not the whole structure of it, but just how you want it to be. Crazy... Well, it's been a pleasure talking with you both. •

# maps forum

## MAPS website enhanced with new pages

The front page of [www.maps.org](http://www.maps.org) has improved graphics and added links. New pages include:

<http://www.maps.org/support.html>

A quick guide to the studies most in need of support at this time.

<http://www.maps.org/secretchief/sctoc.html>

*The Secret Chief: Conversations with a Pioneer of the Underground Psychedelic Therapy Movement*  
by Myron Stolaroff

<http://www.maps.org/research/mdma/marcela.html>

*MDMA and LSD Therapy in the Treatment of Post Traumatic Stress Disorder in a Case of Sexual Abuse* by Marcela

<http://www.maps.org/research/mdma/holland0300.html>

Transcript of the talk given by Dr. Julie Holland at the March 2000 symposium *MDMA (Ecstasy) Research: When Science and Politics Collide* held at the New York Lindesmith Center. Includes link to RealPlayer file of the entire symposium (other speakers: John P. Morgan, MD, Rick Doblin, and Ethan Nadelmann).

<http://www.maps.org/research/mdma/israel/index.html>

Quicktime video clips of five presentations at the *1999 Conference on the Clinical Utility of MDMA and MDE - Dead Sea, Israel* (George Greer, MD; Charles Grob, MD; Deborah Mash, Ph.D.; Raphael Mechoulam, Ph.D.; Juraj Styk, MD).

<http://www.maps.org/research/psilo/azproto.html>

*Effects of Psilocybin in Obsessive-Compulsive Disorder*  
Principal Investigators: Francisco A. Moreno, MD, Pedro Delgado, MD, Alan J. Gelenberg, MD; University of Arizona.

<http://www.maps.org/donating.html>

This new page includes a "shopping button" that links to the MAPS page at [greatergood.com](http://greatergood.com). By shopping brand-name retailers through this portal, a percentage of sales are donated to MAPS.

<http://www.maps.org/research/kristensen.html>

*North Americans Participating in Amazon Ayahuasca Ceremonies*  
by Kim Kristensen

<http://www.maps.org/research/mcdermott.html>

*The Integration of Neo-Reichian Therapy and Rolfing with LSD Psychotherapy*  
by Warren A. McDermott

<http://www.maps.org/research/lumbyreports1.html>

*The Realm of Visions: Towards an Evaluation of the Role of Near-Death Experience in Ayahuasca Psychotherapies* by Marcus C.Y. Lumby

<http://www.maps.org/research/dlewis.html>

*Therapeutic MDMA & the Federal Government: A Cloudy Past and a Hopeful Future*  
by Donald D. Lewis (Harvard Law School)

## Erratum

In the last issue of the Bulletin we printed that there were no deaths related to Ecstasy reported in 1997, according to medical examiner reports compiled by the Substance Abuse and Mental Health Services Administration (SAMHSA).

SAMSHA initially released to us erroneous information. In 1997, there were actually three deaths related to—but not necessarily caused by—Ecstasy. There was one MDMA-related death in 1994, six in 1995, eight in 1996 and nine in 1998, the last year for which data are available.

## MDMA in the press

Attention to MDMA ("Ecstasy") has heightened as the press focuses on the use of it at raves. Television segments have appeared on **CBS 60 Minutes II** and **Dateline**. Articles have appeared in **USA Today** and **TIME Magazine** as well as major US newspapers.

Rick Doblin and Sue Stevens were interviewed for the **TIME** article. For the MAPS response to **TIME**, see [www.maps.org/research/mdma/time.html](http://www.maps.org/research/mdma/time.html). This page includes a link to the story of Sue and Shane Stevens, who took MDMA when Shane had cancer.

## California toxicologists discuss "rave" drugs

On May 5-6, 2000 the California Association of Toxicologists held a conference in North Hollywood, California, the first day of which was devoted to drugs that are commonly found at raves. MAPS sponsored one of the attendees, in order to provide representation by supporters of MDMA. Summaries of the proceedings were prepared by Earth of Erowid, [www.erowid.org/general/conferences/conference\\_cat.shtml](http://www.erowid.org/general/conferences/conference_cat.shtml) and Richard G. Boire of Alchemind Society, [www.cognitiveliberty.org/lawlibrary/laraveconf.htm](http://www.cognitiveliberty.org/lawlibrary/laraveconf.htm).

# An Amateur Qualitative Study of 48 2C-T-7 Subjective Bioassays

Casey Hardison

*"Chance favors the prepared mind."  
—Alexander Fleming*

THIS IS AN AMATEUR QUALITATIVE STUDY of 2C-T-7, a fairly novel entheogenic compound that has been used in a limited context as an adjunct in psychedelic psychotherapy since 1986.<sup>1</sup>

It was chance that at a rare international gathering of pharmacophiles and entheogen aficionados, in a relaxed tropical conference setting, I noticed a number of individuals subjectively bioassayed 2C-T-7. I recognized this as an opportunity to further the understanding of 2C-T-7 through anecdotal experiential accounts and to lend credibility to the scientific methodology of the subjective<sup>2</sup> bioassay. Transforming insight into action, I prepared and administered a written survey. What follows is a summary of the experiences noted by 48 individuals who willingly did ingest 2C-T-7.

## Understanding

The subjective bioassay is probably the oldest of all scientific techniques and is no different than smelling or tasting something to determine if it is spoiled. In regards to putative entheogenic and/or therapeutic compounds, the subjective bioassay involves the consumption of a compound and then the notation of the effects experienced subjectively by an individual. The use of the subjective bioassay is probably most notably demonstrated by Dr. Arthur Heffter's pioneering 1897 systematic pharmacological study of mescaline, the active alkaloid of the peyote cactus *Lophophora williamsii*.<sup>3</sup>

Created by Dr. Alexander Shulgin, 2C-T-7 is properly known as 2,5-Dimethoxy-4-(n)-propylthiophenethylamine.<sup>4</sup> 2C-T-7 is a phenethylamine compound like mescaline and MDMA. On the common nomenclature of 2C-T-7, Dr. Shulgin states:

*I made up the 2-carbon name for a lot of these compounds because they were the 2-carbon homologues of several amphetamines that I had already made and had found to be active. Compounds such as DOM, DOET, DOB, DOI, Aleph-2 and Aleph-7, for example, all have the amphet-*

*amine skeleton and thus show a 3-carbon chain. They are the 3-carbon prototypes, so when I made a number of new compounds without the alpha-methyl group, they were properly phenethylamines containing a 2-carbon chain. And I named them that way, accompanied with a leading letter or element from the 3-carbon code name. Thus these became 2C-D, 2C-E, 2C-B, 2C-I, 2C-T-2 and 2C-T-7. The "T" was a reminder that there was a thio-group (a sulfur atom) in the molecule [vide supra Note 1].*

Many of these compounds have been found to be useful and as adjuncts in psychotherapy, especially MDMA, 2C-B, 2C-E, 2C-T-2 and 2C-T-7.<sup>5</sup> It is an opinion of many involved with psychedelic psychotherapy that a therapist has "no business" conducting psychotherapy with a psychoactive compound that has not been subjectively bioassayed by the therapist.

On questioning Dr. Shulgin about the use of these compounds as follow-ups to MDMA in psychotherapy, Dr. Shulgin replied:

*The compound that has been most frequently used that way has been 2C-B. The argument used here is that the action of MDMA is to bring about an opening of some of the emotional barriers of the*

patient, then with that aspect of the mental state being acknowledged the action of the short term acting psychedelic allows something to be done with it. So it is not really a booster, but really a second and separate session that usually ties quite comfortably with the first session. It is as if the first (the MDMA) shows where the wound is, and the second (the 2C-B or 2C-T-7) allows the healing to start.

Dr. Shulgin further stated that of most of his effective trials, "generally plus-threes were with doses of 20 to 25 milligrams"<sup>6</sup> [vide supra Note 1]. The participants of this study ingested between 25 to 45 mg of 2C-T-7.

### Methods

Using my background in Biochemistry, Botany, and Medical Anthropology, I generated the survey intending that it be as generic as possible, yet still capture what I subjectively recognized to be essential information—mainly dosage, duration, and the generalized effects of 2C-T-7. The survey was distributed to individuals who would accept it and 48 responses were returned. No formal protocol was followed, as this was an impromptu study.

### Survey Questions

Empirical questions included: Did you ingest 2C-T-7? How many other 2C-T-7 bioassays have you completed? Did you consume any other synergistic or antagonistic compounds during your 2C-T-7 bioassay? What quantity of 2C-T-7 did you ingest? Are you male or female? What is your body weight? What is your age? Subjective questions included: What were your dietary habits in the last 72 hours? What was your mindset before consumption of 2C-T-7? What was your mindset during your bioassay of 2C-T-7? What was your mindset after your 2C-T-7 bioassay, especially upon waking after sleep? How were your clarity of thought, movement and energy levels affected by ingestion of 2C-T-7? What length of time was required to begin noticing effects of the 2C-T-7? How many hours after ingestion did you notice peak effects of the 2C-T-7? What was the duration of your peak experience? Was there anything missing that would have contributed and made a difference for you? Were there any awe-inspiring moments of primary importance and will you please share them?

Medical Anthropology takes account of the belief system or cosmology of the individual when determining therapeutic efficacy,<sup>7</sup> hence I attempted to obtain a greater understanding of the role that "mindset" plays in entheogenic experiences, especially in regards to the therapeutic potential of 2C-T-7.

### Results

Forty-eight individuals, 13 female and 29 males and four who did not specify gender, ages 24 to 73, from various cultural paradigms, did willingly ingest 2C-T-7. The mean age of males was 44 years and of females 42 years. Thirty-three individuals reported having no previous experience with 2C-T-7. Twelve individuals reported having completed one to 15 previous bioassays.<sup>8</sup> The dose of 2C-T-7 consumed ranged from 25 mg to 45

mg in males and 25 mg to 33mg in females with dosages ranging from 0.3mg/kg to 0.6mg/kg.

The length of time required for participants to begin noticing the effects of 2C-T-7 ranged from 15 minutes to four hours with most people reporting from one to two hours. The number of hours after ingestion of 2C-T-7 that peak effects were noted ranged from one to six hours with most reporting between two to four hours. The duration of peak experiences ranged from one to five hours with most reporting between two to four hours. Four people noted that they did not understand the use of the word "peak." Several volunteered the total duration of their bioassay, which ranged from 8 to 18 hours with a median around 12 hours.

Other compounds, antagonistic or synergistic, consumed by 16 participants during their experience, included: Marijuana (11), 90 mg Dihydrocodeine and Valium (2), Beer (1), cocaine (1), flower essences (1).

### Set before ingesting 2C-T-7

The responses to questions about state of mind before ingesting 2C-T-7 included such statements as: OK, normal, baseline, centered, fine, up, good, positive, happy, heartfelt, open, clear, receptive, relaxed, willing, interested, curious, stimulated, attentive, connected, eager, anxious, anticipation, apprehension, concerned, nervous, scattered, tired, varied, confused, down, muddy. Notable exceptions were: "Rife with anticipation." "Minimal haunting by my usual demons." "Eager to try but anxiety about dosage." "Concerned about effects of 'speed' content due to my heart condition."

### Set during the experience

The participants noted similar declarations in response to questions about mindset during their 2C-T-7 bioassay. Some notable exceptions were: "Extraordinarily free roaming, very lucid and philosophic." "Complete and utter bliss, incredible, cosmic, and extremely grateful." "General sense of well being, I had many insights, catharsis early on." "Some emotional periods, feeling sad and disoriented." "Became emotional, got in touch with a sorrow in my heart which led me to a place of love."

Participants reporting of the effects of 2C-T-7 on clarity of thought, movement, and energy levels stated: "Clarity of thought somewhere between MDMA and LSD." "At 3-hour mark I had to interact with straight people and negotiate a business exchange, no problem as long as I focused my concentration." "Some difficulties in focusing my thoughts, clear but disoriented." "I moved in an easy coordinated manner while hiking and climbing." "Clarity uncaged, crystalline thoughts, movements like an animal, confident and energetic."

The most often reported physical disturbance was general nausea/upset stomach (7), other exceptions noted include: Headaches (4) including one mention of a migraine lasting into the next morning; Muscle tension (3); Extreme nausea (3); Abdominal Cramping (1); Tachycardia (1); Adrenal Pain (1). When asked, "was



there anything missing that would have contributed and made a difference for your experiences," most responded "no," however a few participants made statements exemplified by: "It was perfect, I couldn't find anything wrong." "Something to help with queasiness." "Something was missing but I don't know what it was." "Lack of physical discomfort." "Perhaps, more?"

#### **Therapeutic effect reported**

Six participants declared therapeutic or healing effects and made these statements: "Very healing." "Gently wept a few times, good medicine." "Very gentle and therapeutic." "I reviewed and processed emotional issues." "Instantaneous awareness of programming." "Some deep emotional issues were addressed and resolved within myself."

Thirty-five participants, 26 males and nine females, stated that they would conduct 2C-T-7 subjective bioassays again. Seven said they would not and four did not respond.

#### **Interpretation**

I failed to ask the chronological question, "How many hours total did you notice the effects of the 2C-T-7? I thought the specific subjective question that would be most useful was, "Would you conduct research with 2C-T-7 again? If not, Why?" I realize now that the use of the word "research" instead of "bioassay" created a listening in the subjects that some did not understand or was incoherent with the intentions of their experience. Not one of the individuals who ingested or bioassayed 2C-T-7 knew they would later be asked to contribute to scientific research, subsequently becoming participants.

All of the reported experiences embodied both cognitive and physical subjectivity and individuality. The subjective responses of the participants illustrate beautifully the Sapir-Whorf hypothesis, which holds that speakers of a particular language must necessarily interpret the world through the unique vocabulary and grammar their language supplies. On this Sapir stated: "No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached. We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation."<sup>9</sup>

This was an international gathering with people from distinct societies with distinct language habits. When Gordon Wasson noticed the many distinctions for mushrooms that his Russian wife knew compared to the three available in his own English language, he asserted that these language distinctions represented a clue as to how religions are founded. So, taking this one step further; it is in semiotics or language that entities relate with one another, whether that language is electro-chemical charge or complex symbolic constructs. Cognition, the process of intuitive reasoning, exists in language, where all of human realities exist, and is thus the recognition of semiotic



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pattern. In other words, "It is all interpretation, and I don't even know that."

Not one person reported the same experience as another. This is the true blessing of the subjective bioassay. The subjective bioassay tells us that we must always take into account the differences in physiology and rates of molecular metabolism as well as rates of recognition of semiotic pattern. Indeed, we are all unique and one of a kind.

#### **Suggestions for further research**

Arthur Kleinman has argued that therapeutic efficacy boils down to a declaration either made by the sufferer or the healer that is listened to by the sufferer with credibility or faith. Therefore, a controlled qualitative study examining the ability of an individual's mindset or linguistic programming to create and cause the psychedelic experience would shed light on the nature of consciousness and its relationship in the therapeutic process. •

#### **Acknowledgments**

This would not have been possible without: The loving support of Kevin "K-Dog" Lovinghawk and his parents; MAPS and the Entheogena: I am grateful for who you are and for your efforts, it is making the difference; My parents' genes and inspiration; A grant from TTN.

#### **Notes and References**

- 1 Shulgin, A.T. Personal communication April 2000, see also note 5.
- 2 Subjective has many definitions, which denotes the subjective explanations of the word subjective. This extends well to the assay of a chemical in that a subjective bioassay is unique to each individual organism's biochemistry and perspective of stimuli.
- 3 <http://www.heffter.org/Arthur.html> last checked May 6, 2000.
- 4 Shulgin & Shulgin (1991, 1998). *PiHKAL: A Chemical Love Story*. Berkeley, CA: Transform Press.
- 5 Stolaroff, M.J. (1994). *Thanatos to Eros; 35 years of Psychedelic Exploration*, Berlin: GAM-Media GmbH.
- 6 For an explanation of the 'plus' rating of subjective bioassay experiences see *PiHKAL* p. xxiv. in Note 4.
- 7 Csordas, T.J. & Kleinman A. (1996). *The Therapeutic Process*. In: *Medical Anthropology: Contemporary theory and method*, Rev. Ed. C.F. Sargent and T.M. Johnson (eds.), Connecticut: Praeger Publishers.
- 8 Five participants each reported one previous bioassay, two reported two previous bioassays, two reported three previous bioassays, and three reported six, seven and 15 previous bioassays respectively.
- 9 Sapir, E. (1929). "The Status of Linguistics as a Science" In E. Sapir (1958, p. 69), *Culture, Language and Personality* (ed. D. G. Mandelbaum). Berkeley, CA: University of California Press.

## T2K – “Toward a Science of Consciousness” in Tucson

Alex Gamma

*Can you imagine what it's like to live in a completely*

*black-and-white world? Not to be able to recognize faces?*

*To see sounds and smells, to taste touches and to hear colors?*

Most of us can't, but nonetheless—or maybe just because of that—we are deeply fascinated by such quirks of consciousness. And we can learn a lot from them, since often the “abnormal” (in the sense of non-ordinary) is more revealing than the “normal.” This year's conference “*Toward a Science of Consciousness*” in Tucson, Arizona, strongly reflected researchers' recognition of this wisdom. Several plenary sessions were dedicated to the study of extraordinary phenomena such as achromatopsia (complete color-blindness), prosopagnosia (face-blindness), synesthesia (strong associations between sensory modalities) and a range of other phenomena. As a very fruitful extension to previous conferences, not only the researchers' point of view (the so-called third-person-perspective) was represented, but also the subjective perspective of the affected (what is called *the first-person-perspective*).

**a** GROUP of synaesthetes from Australia offered us glimpses into their lives so brimming with intertwined cross-modal sensory impressions. One was a musician for whom every tone she plays is associated with a distinct color. When she's composing a tune, not only the tones have to please her ears, but also the colors of the tones must fit together. Another was an aromatherapist who not only smells but sees the mixtures of oils and fragrances she puts together. There was a woman who can see things much better when she puts them into her mouth and who described explosions of colors during an orgasm.

A man who can't see any colors at all explained his notion of what colors are, likening them to the "chroma" of a tone. While a tone's pitch would be analogous to the brightness of a color, its particular emotional character, its chroma, would correspond to the hue of a color. What do you think of this analogy?

#### **Meet Bill Choisser**

One day when I was relaxing in the hot Arizona sun outside the lecture hall, a man called Bill spoke to me. He was in his fifties, had long, gray hair, a full beard and wore blue jeans. I invited him for lunch along with a couple of friends, not knowing that he was going to tell us one of the most fascinating life stories I had ever heard.

Bill is face-blind. That means he can't recognize people's faces, although otherwise his vision is perfect. Imagine living in a world where you would not recognize your own mother on the street even if she passed right by you. This is Bill's reality (and once he *did* in fact fail to recognize his mother on the street). For 49 years Bill lived without fully recognizing his deficit, and only four years ago he became aware of it as a disability other people don't have. This may utterly surprise us, but Bill never had any way to compare the way faces appeared to him to how they appeared to others. Naturally, social and personal tensions due to his face-blindness were a part of his life (e.g. his mother reproaching him for ignoring her on the street), but he never clearly realized they were due to any kind of inability of his. Yet, Bill has learned early on to use other clues to recognize people. For him, it's people's hair and—funny enough—their blue jeans. He grew up in a mining town where everybody wore blue jeans, and somehow he adopted these as one of his two key features to recognize people. He can tell them apart from how their jeans move around their legs when they walk, but he gets little information when people stand still or wear tight jeans. When they don't wear blue jeans, Bill's ability to recognize them by their pants is gone. In a similar way, the more hair someone has in or framing their faces, the more easily recognizable to Bill they are. He wouldn't even recognize himself in the mirror if he made his hair into a pony tail... Interestingly, while these clues help Bill to recognize men, they don't work for women: he's almost completely unable to recognize the opposite sex.

But it's not just about recognition, it's also about

emotion. He can't emotionally relate to people when the key features he relies on are absent. That's why his friends (and himself) are mostly long-haired people wearing blue jeans. And that's why the time he spent in the navy was sheer horror. Imagine that: All heads and faces shaved, all uniforms the same, no blue jeans. He couldn't recognize anybody, let alone emotionally relate to anyone. In a sense, he was completely alone in this mass of what must have appeared to him as cold uniformity.

Innate face-blindness (prosopagnosia) is extremely rare and so most everyone affected thinks they're the only one in the world. So did Bill. That's why he started to look for other face-blind people over the internet. Over the years, he found many of them scattered all over the planet and brought them together in his web community (see references for URL).

#### **Neural correlates of consciousness**

Reflecting the inherently open nature of the research field, the presentations at this year's conference drew from a wide range of disciplines such as biology, psychology, philosophy, quantum physics, art, ethnology, anthropology and ethics. Yet, in all this richness one common focus of research that emerged was the search for the Neural Correlates of Consciousness (NCCs). David Chalmers, one of the conference organizers and leading voices in the philosophy of mind, defined an NCC as a neural state that corresponds with a certain state of conscious experience. Discovering such states in the brain is thought to be a promising strategy to further our understanding of how the brain gives rise to conscious experience (what Chalmers has dubbed "the hard problem"). Although the search for NCCs certainly represents a reasonable and useful research program, the existence of NCCs is an open question that must be answered empirically, since it depends on the truth of several assumptions. First, it is based on the widely held belief that there is some systematic relationship between the mind and the brain. Prevailing materialist thinking takes it that everything in the universe—including consciousness—is made of matter or is a direct or indirect effect of material processes. Thus, consciousness arises somehow from physical processes, which makes it appear likely that there is a systematic causal relationship between the two.

However, the existence of NCCs could also be reconciled with a dualistic conception of the world. Although dualism sees the mind as essentially independent from the brain, there might still be some systematic connections between the two, since some kind of interaction between mind and brain must also be assumed in a dualistic framework. It is in fact hard to think of any plausible theory that would deny any systematic relationship between mind and brain. Thus, the first assumption seems a reasonable one.

Another assumption behind the idea of NCCs is that the brain is the exclusive physical basis of conscious experience. This assumption, too, is widespread and

supported by numerous lines of evidence. Still, it is by no means an unquestioned one. In his plenary talk, philosopher Evan Thompson defined consciousness as an intersubjective phenomenon which does not find its basis solely in one human brain but emerges out of interpersonal interaction. Thus, he rejects Chalmers' definition of the "hard problem" as misguided, since it fails to acknowledge the essentially social nature of human consciousness.

#### **First-person perspective**

The justification of the search for NCCs as a research program does not, however, depend on the truth or falsity of its underlying assumptions. Even if we should never find a true NCC, the knowledge and facts we gain in the course of our search will probably transform the entire enterprise and lead it into more promising directions. In that sense, I believe that failure and success can be equally enlightening, and often the latter is crucially dependent on the former.

However, the scientific study of consciousness in the past several decades has been dominated by the neurosciences on one side and a functionalist approach to psychology on the other, while the phenomenology of subjective, first-person experience has been largely neglected. Now at the turn of the millennium, the Tucson conference (dubbed by someone "T2K") reflected a growing awareness of this bias. Both organizers and many researchers recognized that a search for NCCs that takes serious the task of establishing links between the physical and the mental must not only thoroughly explore the neurobiological side of this divide, but also the mental side. Thus, there were a number of presentations that called for a revival of the systematic study of phenomenology. Russell Hurlburt from the University of Nevada has begun to tap and classify the basic denizens of our every day phenomenological consciousness (does it surprise you that most of the time you're engaging in some kind of thinking and that you don't pay conscious attention to the environment?). Several plenary talks advocated the use of meditation to hone skills of introspection, thereby coming to a better understanding of the mechanisms of our mental processes. And the various first-person reports from people with color-, face-blindness and synesthesia provided glimpses into heretofore largely uncharted phenomenal territories.

#### **Neural synchrony and binding**

Progress was also made on the neurobiological side of the divide, using well-established third-person methodologies (i.e. what is typically called "science"). In recent years, studies of the visual system of animals and humans have suggested that neural synchrony may be the key to feature binding and conscious perception. What does that mean?

Imagine walking down the street and watching a car pass by. The car has a color, a complex shape, and it is moving. All these features are processed in different places in your brain. So how does your brain "bind" these

features together so that it knows that they all belong to the same object, i.e. the car? It does, so the theory goes, by using synchronized neuronal firing in the range of 30 Hz or higher between the different brain areas that process the different features of an object. The idea is that this is kind of a neural signature that identifies which of the various features simultaneously processed by the brain belong to the same object. There is also evidence that feature binding may be a prerequisite for conscious perception. In fact, the process of feature binding could be subjectively experienced as attention that is turned towards an object so that it may be consciously perceived.

Other theories are simpler. John G. Taylor from King's College in London offered, in unexpected simplicity, that consciousness is localized to the parietal lobes. He presented a fair amount of evidence in support of his hypothesis and—since he probably felt that the simple would be hard to swallow for some—ended by saying that finding consciousness clearly localized wouldn't necessarily make it easier to understand than if it was distributed all over the brain. In which he was probably right.

#### **Quantum physics**

Invoking quantum physics to explain consciousness has appealed to many people, researchers and adherents of trans-modernism alike. Maybe this is because some interpretations of quantum physics assign a crucial role to conscious observers, or maybe it is just because both quantum physics and consciousness are mysterious, and it is tempting to think that these mysteries have a common basis. Whatever the reason, the validity of this approach is completely unclear.

In Tucson, we saw presentations of varying quality on this topic. Gerard Milburn from the University of Queensland in Australia opened a fascinating window into the strange principles and seemingly infinite powers of quantum computing. In a very competent talk, David Albert from Columbia University, established a quantum mechanical basis for the exclusivity of first-person, subjective knowledge, i.e. the fact that certain kinds of information appear to be in principle only accessible to the subject of experience. However, as he was cautious to point out, it is as yet unclear whether his model has anything to do with the real world. Stuart Hameroff, one of the conference organizers from the University of Arizona, presented a sweeping theory of how collapsing quantum superpositional states in the neurons' microtubules could generate moments of consciousness. Unfortunately, he spread out the (not too generous) substance of his theory so thinly that the result was full of holes. It will require a lot more evidence (or even any evidence) for the quantum-microtubule theory of consciousness to become a serious candidate amongst rivaling theories.

#### **Altered states**

In our account of the 1998 Tucson conference, (MAPS Bulletin Vol.8 No.3), we expressed the hope that in the next conference the organizers would dedicate a plenary



session to studies of hallucinogen- and other drug-induced altered states of consciousness. I was pleased to see that this was indeed what they did. Luis Eduardo Luna from the Swedish School of Economics and Benny Shanon from the Hebrew University in Jerusalem both talked about the phenomenology of the ayahuasca experience. Shanon offered a cognitivist psychological framework within which to analyze the ayahuasca experience and underscored the importance of firsthand experience in its study.

A highly interesting talk was given by Elisabeth Ferguson from the Institute of Transpersonal Psychology in Palo Alto. She reported about an experiment with MDMA-experienced subjects who underwent hypnotic suggestion in order to re-evoked the characteristic MDMA feeling. The results do indeed suggest that the hypnotic state is psychologically very similar to previous MDMA experiences of the subjects. It would be interesting to see whether this similarity extends to physiological effects of MDMA such as elevated blood pressure and heart rate. This experiment may have potentially important consequences for current efforts to re-establish MDMA as an adjunct to psychotherapy. If hypnotic suggestion could be reliably used to evoke an MDMA-like feeling and if the hypnotic state proved to be therapeutically valuable, the actual exposure to MDMA in psychotherapy might be reduced, which could help quell concerns about potential MDMA-induced neurotoxicity. Preliminary results from Ferguson's studies even indicate that an MDMA-like experience may be induced in subjects without prior exposure to the drug.

In a concurrent session on Altered States of Consciousness Stanely Krippner presented a cross-cultural model of dissociative experiences that classifies experiences according to the extent they are controlled or uncontrolled, and are characterized by flow or dissociation. His model provides a more fine-grained categorization of experience than what Western science would subsume under the label "psychopathological."

Charles Tart introduced us to his Archive of Scientists' Transcendent Experience (TASTE), which provides scientists with an anonymous way to describe any kind of altered, non-ordinary experience they've had but kept to themselves for fear of ridicule or adverse career effects. Take a look at this most interesting archive (URL given below).

My own presentation in this session focussed on how psychopharmacologically induced altered states of consciousness could facilitate the detection of neural correlates of consciousness by expanding the range and/or intensity of both subjective experience and neurobiological states. Thus, correlations between neurobiological and experiential variables may not manifest during normal consciousness, but may become apparent only under psychopharmacological stimulation.

### Endings with bangs

After a week of filling up our consciousnesses with consciousness talk, Friday evening witnessed the second edition of the Poetry Slam, which had been very successfully initiated at the 1998 conference. Again, it was a hilarious event full of funny, thoughtful, beautiful, silly, intellectual and even dissociative poetry finished off with the David Chalmers' Zombie Brothers Blues Band singing the Zombie Blues. On Saturday evening Chalmers invited all participants to an "End of Consciousness" party at his place, which, alas, I missed.

In between, however, Marilyn Schlitz from the Institute of Noetic Sciences had another bang in store for us on Saturday morning's plenary session which was concerned with the question: "Consciousness at the millenium: where are we now, and where are we going?" At the 1998 conference she had presented data on "Distant Intentionality" experiments, which indicated that a person can intentionally influence another person's autonomous activity from a distance (i.e. both persons are in different rooms, and the influenced person does not know of the presence of the influencing person). Since then, her group has replicated this finding several times, but in the spirit of rigorous science, she wanted other labs to replicate it too. So an English colleague of hers repeated the experiment, using the very same design and even the same subject population. Still, he consistently failed to find evidence for distant intentionality. According to Schlitz, this is evidence for a fundamental experimenter effect going far beyond what was so far known under this term. It could mean that the experimenter's mental set and expectation toward the outcome of the experiment may influence the actual outcome in the preferred direction. Should this turn out to be the case, science would face the almost frightening task of going through all past experiments again, trying to evaluate the effects of possible experimenter's bias. Or maybe this is naïve. Maybe the real task would be to question the nature of reality...

### References

Bill Choisser's website of the face-blind: <http://www.choisser.com>

Charles Tart's Archive of Scientists' Transcendent Experiences (TASTE): <http://psychology.ucdavis.edu/tart/taste>

Evan Thompson's view on the intersubjective nature of consciousness: <http://www.canisius.edu/~gallagher/pcs.html>

A "webliography" of various resources on consciousness: <http://www.consciousness.arizona.edu/links.html>

**Consciousness Technologies***July 20-23, 2000**Cascade Mountains near Sisters, Oregon*

A conference exploring various techniques for accessing and navigating novel states of consciousness. Includes seminars, workshops, discussion groups, sweat lodges, music by the Starlight Trance Band and more. Presenters: Dale Pendell, Clark Heinrich, Kelly Ivors, Robert Sullivan, Crystal, Todd Roetken & Eileen Kilgallon and Johannes Colby. Organizer: Richard Nelson. For details see <http://www.charm.net/~profpan/ct/>

**Psychointegrator Plants, Art, Ethnobotany and Psychotherapy***July 23 to August 1, 2000*

An experiential seminar in the Brazilian Amazon with: Luis Eduardo Luna, Ph.D. anthropologist; Dennis MacKenna, Ph.D. ethnopharmacologist; Silvia Polivoy, psychologist; Pablo Amaringo, artist; Kathleen Harrison, artist; Ivan Padilla, Kundalini Yoga teacher. For more information contact Silvia Polivoy in Argentina: (54-11) 4774-3892, E-mail: [silviap@house.com.ar](mailto:silviap@house.com.ar), <http://users.lycaem.org/~entheos>

**Telluride Mushroom Festival***August 24-27, 2000 — Telluride, CO*

The Telluride Conference is designed for persons interested in mushroom identification, edible and psychoactive mushrooms, and mushroom cultivation. For more information contact: Fungophile, P.O. Box 480503, Denver, CO 80248-8503; Tel: 303-296-9359, Fax: 303-297-1026; E-mail: [lodomyco@uswest.net](mailto:lodomyco@uswest.net)

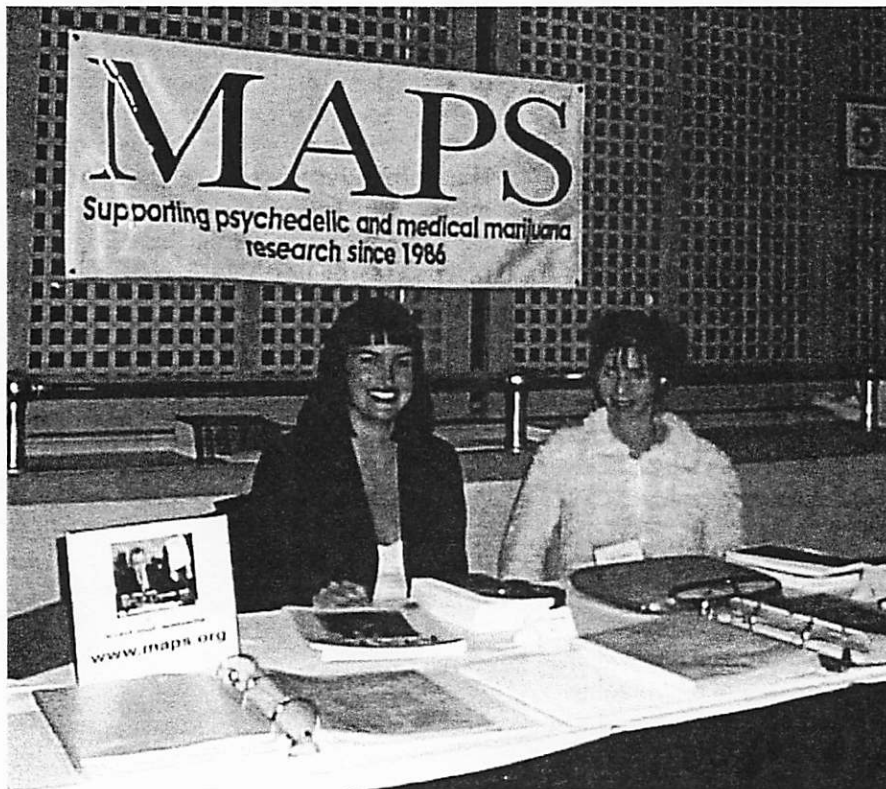
**Shamanism 2000***October 24-29, 2000**Oberhausen, Germany*

For more information please see: [www.med.uni-muenchen.de/medpsy/ethno/Konferenz2000.jpg](http://www.med.uni-muenchen.de/medpsy/ethno/Konferenz2000.jpg)

**Nepalese Shamanism, Trance and Psychoactive Plants***September 22-28 and October 1-7, 2001**Dhulikel Mountain Resort, Nepal*

Website: [www.psychoactivity.org](http://www.psychoactivity.org)

Reports on previous conferences and updates about future events are listed at [www.maps.org/conferences](http://www.maps.org/conferences).



Carla Higdon and Sylvia Thyssen spoke with people who visited the MAPS table at the *Ayahuasca—Amazonian Shamanism and Spirituality* conference held in San Francisco, March 17-19, 2000.

photo by Casey Hardison

## MAPS MEMBERSHIP INFORMATION

MAPS IS A MEMBERSHIP-BASED organization working to assist psychedelic researchers around the world design, obtain governmental approval, fund, conduct and report on psychedelic research in humans.

Founded in 1986, MAPS is an IRS approved 501 (c)(3) non-profit corporation funded by tax-deductible donations from 1,800 members.

MAPS' founder and current president, Rick Doblin, holds his Masters and Ph.D. in Public Policy from Harvard's Kennedy School of Government. He previously graduated from Stan and Christina Grof's Holotropic Breathwork 3-year training program.

Sylvia Thyssen is responsible for editing the *Bulletin* and oversees MAPS' website and outreach efforts. She is a graduate of the University of North Carolina at Chapel Hill, where she majored in Art History and French.

Carla Higdon coordinates MAPS member services and the publicity, marketing and distribution of MAPS publications. She is a graduate of Western Carolina University where she majored in Art Education.

MAPS has previously funded basic scientific research in both humans and animals into the safety of MDMA (3,4-methylenedioxymethamphetamine, *Ecstasy*) and has opened a Drug Master File for MDMA at the U.S. Food and Drug Administration. MAPS is now focused primarily on assisting scientists to conduct human studies to generate essential information about the risks and psychotherapeutic benefits of MDMA, other psychedelics, and marijuana, with the goal of eventually gaining governmental approval for their medical uses.

ALBERT EINSTEIN WROTE: "Imagination is more important than knowledge."

If you can even faintly imagine a cultural reintegration of the use of psychedelics and the states of mind they engender, please join MAPS in supporting the expansion of scientific knowledge in this area. Progress is possible with the support of individuals who care enough to take individual and collective action. For your contribution—in addition to supporting research—you will receive to the following benefits:

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Rick Doblin, Ph.D.  
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Sylvia Thyssen,  
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Carla Higdon,  
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*The pain passes, but the beauty remains.*

— Pierre Auguste Renoir



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*Terence McKenna*

November 16, 1946 — April 3, 2000

**E**VERYTHING IS A BLESSING and everything comes as a gift. And I don't regret anything about the situation I find myself in. If psychedelics don't ready you for the great beyond, then I don't know what really does. And we're all under sentence of 'moving up' at some point in our lives.

I have an absolute faith that the universe prefers joy and distills us with joy. That is what religion is trying to download to us, and this is what every moment of life is trying to do—if we can open to it. And we psychedelic people, if we could secure that death has no sting, we would have done the greatest service to suffering intelligence that can be done.

And I feel that death is close, and I feel strong because of this (psychedelic) community and these people and plants that it rests on, and the ancient practices that it rests on, and I am full of hope, not only for my own small problems, but for humanity in general."

—Terence McKenna  
December 1999, Esalen Institute