Prologue: FirstSessions

Jne morning in December 1990, I gave both Philip and Nils an injection of a large dose of intravenous DMT. These two men were the first people in the study to receive DMT, and they were helping me determine the best dose and manner of injecting it. They were our "human guinea pigs."

Two weeks earlier, I had given the very first dose of DMT to Philip. As I will describe, the intramuscular injection, into his shoulder, didn't give completely satisfactory results. We then switched to the intravenous route, and Nils received the drug that way for the first time a week later. Nils's reaction indicated that the dose we gave him was too low. So today Philip and Nils were going to receive substantially higher doses of intravenous DMT.

It was hard to believe we really were giving DMT to human volunteers. A two-year process of obtaining permission and funding, which I felt would never end, was finally over. Attaining the goal never seemed as likely as the continual struggle to do so.

Philip and Nils both had previous experience with DMT, and I was glad they did. About a year before starting our study, they had attended a ceremony in which a Peruvian folk healer gave all participants *ayahuasca*, the legendary DMT-containing tea. The two men were enthusiastic about this orally active form of DMT and were eager to smoke pure DMT the next day, when a member of the workshop made it available. They wanted to feel its effects in a much more immediate and intense manner than the tea form allowed.

Philip's and Nils's experiences smoking DMT were typical: a startlingly rapid onset of effects, a kaleidoscopic display of visual hallucinations, and a separation of consciousness from the physical body. And, most curiously, there was a feeling of "the other" somewhere within the hallucinatory world to which this remarkable psychedelic allowed them entrance.

Their prior experience with DMT was a very important aspect of bringing them in as the first volunteers. Philip and Nils were familiar with the effects of DMT. Even more crucial, they were familiar with the effects of smoking the drug, which would help them gauge the adequacy of the two different administration methods I was considering, intramuscular (IM) or intravenous (IV), in reproducing the full effects of the smoking route. Since recreational users of DMT usually smoke it, I wanted to approximate as closely as possible the effects as they occur when taken in this manner.

On the day Philip received the first dose of DMT by the intramuscular route, I already was thinking ahead. Perhaps the IM method might be too slow and mild compared to smoking the drug. What I had read about IM DMT suggested it took up to a minute to start working, substantially longer than when it was smoked. However, since all but one of the previously published human research papers on DMT reported giving it intramuscularly, I was obliged to begin this way. This older literature suggested that the dose I was to give Philip, 1 milligram per kilogram (mg/kg), about 75 mg, probably would be a moderately high dose.

Philip was forty-five years old when he began participating in our research. Bespectacled, bearded, and of medium height and build, he was an internationally known clinical psychologist, psychotherapist, and workshop leader. He was soft-spoken but direct, and he elicited great affection from his friends and clients.

At the time, Philip was beginning a divorce that would become especially long and difficult. His life had been marked by many deep changes, losses, and gains, and he seemed to take the good and the bad with the same equanimity. He liked to say that the title of his self-help best-seller would be *Surviving Your Life.*

At least five years had passed since I last gave an IM injection of anything to anyone, and I was nervous about administering the first dose of DMT this way. What if I missed? The last time I gave such an injection, I probably had been giving the antipsychotic drug haloperidol to an agitated patient with psychosis. These patients often had their arms and legs tied down by psychiatric orderlies or the police beforehand, to make sure their disorganized and frightened behavior didn't end in violence. This also kept the patients' arms in a relatively stable position for my injection.

I tried remembering the confidence with which I previously gave IM shots, since I had performed hundreds in the past. The secret was to think of the syringe as a dart. We were taught in medical school to pretend you were throwing this dart into the rounded deltoid muscle of the shoulder, or the gluteus maximus muscle of the buttocks. A single, fluid motion, lightening the pressure just as the needle pierced the muscle through the skin, usually produced excellent results. We practiced on grapefruits.

Philip, however, was neither a grapefruit nor an acutely psychotic patient delivered up to me for involuntary tranquilization. He was a professional colleague, friend, and research volunteer on equal footing with me and my staff. Philip was to be the scout. Cindy, our research nurse, and I were to remain at "base camp," to hear about where he went after his return.

Practicing my technique in the air, I walked down the hall and entered Philip's room.

Philip lay in bed; his new girlfriend, Robin, sat nearby. The cuff of a blood pressure machine was loosely wrapped around his arm. We would check his heart rate and blood pressure frequently throughout the session.

I explained what was going to happen: "I'll wipe your shoulder with some alcohol. Take as much time as you need to collect yourself. Then I'll inject the needle into your arm, draw back to make sure I'm not in a blood vessel, and then push in the plunger on the syringe. It might sting, or it might not. I don't really know. You ought to feel something in a minute or less. But I'm not sure what that something will be. You're the first."

Philip closed his eyes for a moment as he prepared to venture into unknown territory, worlds only he would perceive, leaving us behind to look after his life functions. He opened his eyes widely to briefly gaze at us one more time, then closed them again, took a deep breath, and on his exhalation said, "I'm ready."

The injection went without a hitch.

After a little more than a minute, Philip opened his eyes and began breathing deeply. He looked as if he were in an altered state of consciousness. His pupils were large, he began groaning, and the lines of his face smoothed. He closed his eyes while Robin held his hand. He laid extremely still and remained silent, eyes closed. What was happening? Was he all right? His blood pressure and heart rate seemed fine, but what about his mind? Did we overdose him? Was he having any effect at all?

About 25 minutes after the injection, Philip opened his eyes and looked up at Robin. Smiling, he said,

/ *could have done more.*

We all breathed a sigh of relief.

Fifteen minutes later, or 40 minutes after the injection, Philip started speaking slowly and haltingly.

/ *never lost touch with my body. Compared to smoking DMT, the visuals were less intense, the colors were not as deep, and the geometric patterns did not move as fast.*

He sought my hand for comfort. My hands were damp from nervousness, and he laughed good-naturedly at my anxiety, which was clearly greater than his!

Upon arising to go the bathroom, Philip was shaky. He drank some grape juice, ate a little container of yogurt, and filled out the rating scale. He felt "spaced-out," fuzzy in his mind, awkward, while we walked to and

from another building where I had some business. It was important to be with him, to observe how he functioned for the next couple of hours. Philip seemed well enough three hours after his DMT shot for Robin to drive him home. We said good-bye in the hospital parking lot, and I told him to expect a call that night.

When we spoke, Philip told me that Robin and he went to eat lunch after leaving the hospital. He immediately became more alert and focused. On the ride home, he felt euphoric, and colors seemed brighter everywhere he looked. He sounded quite happy.

Philip sent me a written report a few days later. Most important was his last comment:

/ *expected to jump to a higher level, to leave the body and ego consciousness, the jump into cosmic space. But this did not happen.*

This threshold to which Philip referred is what we now call the "psychedelic threshold" for DMT. You cross it when there is a separation of consciousness from the body and psychedelic effects completely replace the mind's normal contents. There is a sense of wonder or awe, and a feeling of undeniable certainty in the reality of the experience. This clearly had not occurred with 1 mg/kg intramuscular DMT.

It was great to have Philip in this explorer's role. He was psychologically mature and stable and was familiar with the effects of psychedelics in general, and DMT in particular. He could make clear, understandable comparisons between different drugs and different ways of receiving them. His case was powerful validation of our decision to enroll only experienced psychedelic users.

Philip's report left no doubt that IM DMT effects lagged behind those of smoked DMT. I considered giving a higher dose. However, even if full peak effects developed, I doubted that this route would ever give the "rush" that is another hallmark of smoked DMT. During this "rush," which usually happens in the first 15 to 30 seconds after smoking DMT, the shift from normal consciousness to an overwhelming psychedelic reality takes place with breathtaking speed. It is this "nuclear cannon" effect that users find so frighteningly attractive. We definitely needed a more rapid way of getting DMT into the system.

Most recreational DMT users smoke it in a pipe, sprinkled on marijuana or a non-psychoactive herb. This is not the ideal method of getting DMT into your body. The drug often catches fire, which is disconcerting when you are trying to inhale as much of the vapor as possible. The smell of burning DMT is intensely nauseating, like that of burning plastic. As the drug takes effect and the room seems to begin breaking up into crystalline shards, your body following suit, it becomes nearly impossible to know if you are inhaling or exhaling. In that state of intoxication, imagine trying to breathe into your lungs as much of this flaming, foul-odored blob of chemical as possible!

The fastest and most efficient way to administer DMT is by injection. Intramuscular injections depend on the relatively limited blood flow through muscles to drain away the drug, and it is the slowest type of injection. Drugs also may be given into the skin, or subcutaneously, where the slightly richer blood flow makes for a faster, though usually painful, method. Injection into a vein is the best method. From the intravenous, or IV, injection site, drug-rich blood returns to the heart. The heart pumps this blood through the lungs; from there it reenters the heart and then makes its way out to the rest of the body, including the brain. The time for this entire process, what physiologists call "arm-to-tongue time," is usually about 16 seconds.[1]

I consulted with my colleague who had made the DMT, David Nichols, Ph.D., at Purdue University in Indiana. He agreed that I needed to switch to the intravenous route. Reflecting upon our mutual anxiety about this change in plans, he added dryly, "I'm glad it's you and not me."

It was time to consult with Dr. W., the physician at the U.S. Food and Drug Administration (FDA) who, after helping guide the project through the two-year regulatory process, was now overseeing its performance. When I asked his opinion, he laughed and said, "You are the only research scientist in the world giving DMT. You're the expert. You decide."

He was right, but I was nervous about entering such uncharted territory so quickly, after giving just one dose of DMT. There was only one previously published report that described giving DMT intravenously, but this was to psychiatric patients, not normal volunteers.[2] That 1950s project studied severely impaired patients with schizophrenia, most of whom were" unable to report much about their experiences. In fact, one unfortunate woman's pulse was not detectable for a short while after she received IV DMT. It was in deference to this report that I was so cautious about heart function in all prospective volunteers.[3]

Dr. W. recommended trying about one-fifth the IM dose when switching to the IV route. "That will probably give you lower blood and brain levels of DMT than you produced by giving it intramuscularly, and you should have some room to maneuver," he said. "You probably won't overdose anyone this way." In our case, that meant converting the IM dose of 1 mg/kg to 0.2 mg/kg intravenous DMT.

Philip and Nils both had eagerly volunteered for this new and uncharted phase of the research: finding a satisfactory dose of IV DMT in normal volunteers. Since both had smoked DMT previously, we would be able to compare directly the effects of IV to smoked drug. And, in Philip's case, we could compare IV to IM routes.

Nils was thirty-six years old when he began in our research. As a younger man, Nils had enlisted in the Army, desiring to specialize in explosives. However, he quickly saw that he was unfit for the armed services, and he applied for an early discharge for psychological reasons. Philip happened to be the psychologist who performed this evaluation on Nils, and they had remained friends afterward.

Nils was keenly interested in mind-altering drugs and always was looking for a neglected plant or animal product that might produce such effects. He had written several popular pamphlets, including one announcing his discovery of the psychedelic properties of the venom of the Sonoran Desert toad. This venom contains high levels of 5-methoxy-DMT, a compound closely related to DMT. When smoked, this toad product is quite impressive.

Nils was a long and lanky fellow, charming and fun to be around. He had taken LSD many times, having "lost track after the 150th dose." The first time he had smoked DMT, at Philip's house the year before, he was powerfully moved. He said,

It made strong telepathic impressions, causing mental bonds with the people around me. This was confusing and overwhelming. I became very excited as an inner voice spoke to me. This was my intuition directly relating to me. It was the most intense experience of my life. I want to go back. I saw a different space with bright bands of color. I couldn't raise my hands, I tripped so hard. It is a mental Mecca, an excellent reference point for all other psychedelics. Those around me looked like alien space insects. I realized they were all part of it, too.

Nils received 0.2 mg/kg intravenous DMT about a week after Philip's first IM dose. My feelings were similar to those I had for Philip's injection; that is, while the actual day was a landmark, it also seemed like a dry run, a rehearsal for the real thing. It was very likely we would go beyond this dose.

On the day of Nils's 0.2 mg/kg session, I found him lying on the hospital bed in his research center room, underneath his familiar Army sleeping bag. He took this bag with him whenever he traveled, both literally and figuratively: when he would journey on the road, or when he would take a psychedelic drug trip.

Cindy and I sat on either side of Nils. I gave him a brief preview of what to expect. He nodded for me to begin.

Halfway through the injection, Nils said,

Yes, I taste it.

Nils turned out to be one of the few volunteers who could taste intravenous DMT as the drug-rich blood rushed through his mouth and tongue on the way to his brain. It was a metallic, slightly bitter taste.

I thought, "This seems fast enough."

My notes are sketchy as to the effects of this dose of IV DMT on Nils. This may have been due to his taciturn nature, or because neither of us were especially impressed with the intensity of the experience. He did remark, however, that 0.2 mg/kg was "maybe one-third to one-fourth" a full dose, relative to his experience smoking DMT. Perhaps feeling a little overconfident from how easy these first two sessions—Philip's IM, and Nils's IV—had been, I decided to proceed immediately to triple Nils's IV dose: from 0.2 to 0.6 mg/kg.

My confidence was premature. In retrospect, a more cautious move to doubling it, to 0.4 mg/kg, would have been more reasonable. Thankfully, I didn't jump to 0.8 mg/kg, which would have happened had I followed Nils's suggestion that 0.2 mg/kg was a fourth of a full dose.

This morning, both Philip and Nils were going to get 0.6 mg/kg IV DMT.

It was sunny, cold, and windy in Albuquerque that day, and I was glad to be working inside. I entered Nils's room in the Research Center. He was lying under his sleeping bag, awaiting the first 0.6 mg/kg dose. Cindy already had placed a small needle into a forearm vein, the portal through which I would inject the DMT solution directly into his blood. She sat on his right side, and I on his left, where the tubing from the IV line dangled off his arm. Philip also was here; he was scheduled to receive the same dose later in the morning if all went well with Nils. He sat at the foot of the bed, curious about what Nils was to experience, and ready to provide moral support for all of us. Little did we suspect we'd need him for physical backup, too.

I infused the solution of DMT somewhat more quickly than I did for Nils's previous 0.2 mg/kg dose, over 30 seconds rather than a minute. I thought a faster injection might allow for less dilution of the DMT in the bloodstream. This then would generate higher peak levels of DMT in the blood and, therefore, the brain. After the infusion of drug was complete, Nils said excitedly,

I can taste it. . . . Here it is!

Immediately after blurting this out, he began tossing and turning under his sleeping bag. He then sat up with a start, exclaiming,

I'm going to vomit!

He gazed at us, stunned and uncertain. Cindy and I looked at each other at the same time, realizing we had nothing into which he could throw up. We hadn't foreseen that our test subjects might need to vomit. He mumbled,

But I didn't have any breakfast... so *there's nothing to throw up.*

Nils became agitated and pulled the pillow and sleeping bag over his face. He curled into the fetal position, away from us and the blood

pressure machine, kinking the tubing that connected the cuff to the unit. We could not get a reading at either 2 or 5 minutes, when we knew his blood pressure and heart rate would be at their highest, and potentially most dangerous, levels. He tried climbing out of the bed with a mostly purposeless flailing of his arms and legs—but this was a substantial mass of limbs in someone 6'4". His hands were cold and clammy as Cindy, Philip, and I joined forces and maneuvered him back into the now-too-small-seeming bed. At 6 minutes, he retched into a basin we found in the closet. Because he had to sit up to do so, we were able to reposition him in the bed, and we obtained a blood pressure and heart rate recording. At this point, 10 minutes after the injection, his readings were surprisingly normal.

He reached out to Cindy, touching her arm and sweater. It looked as if he were about to stroke her hair, but quickly seemed to forgot what he was going to do. Nils then stared at me, saying,

/ need to look at you now, not Philip or Cindy.

I did my best to look calm, answering his gaze with my own, praying quietly that he would be all right. At 19 minutes, he sat up on his elbows and laughed. He looked very "stoned": large pupils, lopsided grin, mumbling incoherently.

He finally said,

/ think the best high dose is between 0.2 and 0.6.

We all laughed, and the tension in the room dropped a few notches. Nils still had his wits about him, at least at that moment.

He continued,

There was the movement of the self. I am disappointed that it's ending. It was a cafeteria of colors. A familiar feeling. Yes, I've returned. "They" were there and we recognized each other.

I asked, "Who?"

No one or thing identifiable as such.

He still seemed quite under the influence. I did not want to press him.

He shook his head and added,

Coming down from the high was very colorful, but it was boring compared to the peak. At the peak, I knew I was back where I had been when I smoked it last year. It was a lonely feeling leaving there.

I thought I had gotten really sick. I felt you hovering over me, like I was dying, and you all were trying to resuscitate me. I hoped everything was all right. I was just trying to catch what was happening inside.

He paused, then concluded,

I'm tired. I'd like to nap, but I'm not really sleepy.

Nils had little to say beyond this, other than that he was ravenously hungry, wisely having skipped breakfast. He ate heartily while filling out our rating scale. So even Nils thought 0.6 mg/kg was "too much"!

I spent a few minutes in the nurses' lounge, reflecting upon what we had just seen. From a cardiac point of view, Nils's blood pressure and heart rate had risen only moderately, although we missed the readings at their presumed peak. Thus, there seemed likely to be no physical harm from administering 0.6 mg/kg IV DMT. However, I was not sure if the thinness of Nils's report was because he could not remember what had happened, or because of his style of keeping to himself most of what had taken place.

We clearly had broken through the "psychedelic threshold." The suddenness and intensity of onset, the irrefutable nature of the experience, the inhabited sense Nils described, all added up to a "full" DMT trip. But was it too far beyond the psychedelic barrier? Nils was a self-acknowledged "hard head," requiring higher doses than many to attain comparable levels of altered perceptions from the same drug. How would Philip fare?

Philip and I walked down the Research Center's brightly lit hall. We passed Nils at the nurses' station, looking for more food. He felt great. It was reassuring to see how well he looked so quickly after his harrowing jump off the psychic cliff.

I asked Philip, "Are you sure you want the same dose?"

"Yes." There was absolutely no hesitation.

I was not so sure.

If Philip declined undergoing an experience similar to Nils's, my anxiety would have become more tolerable. Perhaps he would settle for 0.5 or 0.4 mg/kg. This would be easy enough to do—I could simply stop short of

emptying the entire syringe full of DMT solution. While I believed 0.6 mg/kg most likely was physically safe, the potentially shattering mental effects loomed in front of all of us even more dramatically than they had before Nils's session. However, Philip was not to be outdone by his friend and fellow "psychonaut." He was ready for *his* 0.6 mg/kg dose.

This tendency in our volunteers, to persevere even under the possibility of an annihilating psychedelic experience, was marked. It was most apparent during our tolerance study, which took place the next year, in 1991, in which volunteers received four large doses of DMT, each separated by only 30 minutes. Not one volunteer, no matter how worn out, refused that fourth and final high dose of DMT.

Philip's desire to take the same dose as Nils confronted me with a scientific, personal, and ethical dilemma. My training had taught me that one should not shy away from prescribing a little too much of a medication if the circumstances called for doing so. For example, very high doses might be necessary for a full therapeutic response in otherwise treatment-resistant patients. In addition, it was important to learn about toxic effects, to be able to recognize them quickly in various circumstances. This latter point is even more important when studying a new experimental drug.

It was within my authority and responsibility as the principal investigator of the project to tell Philip I did not want him to repeat a Nils-like 0.6 mg/kg DMT experience. However, Nils seemed fine now. Most importantly, he was the first and only person to get this dose. I had planned on two 0.6 mg/kg sessions that morning so that I could determine if this dose caused similar responses in two different people.

I liked Philip, and he did want his 0.6 mg/kg dose. But how much of a role did our friendship play? I didn't want to do as he requested just so that I wouldn't jeopardize our relationship, but I wanted his participation in this early stage of the study to be worth his while. He was, in some ways, "doing us a favor." Philip lived far from Albuquerque, and asking him to return once more to get 0.6 mg/kg, if 0.4 or 0.5 were not a full-enough dose, would have inconvenienced him. There were many competing priorities. I hoped I made the right decision by agreeing to give Philip 0.6 mg/kg.

Entering his room, Philip and I said hello to Cindy and Robin, Philip's irlfriend, who were already there, waiting for us. He made himself comfortable on the bed. Another 0.6 mg/kg IV DMT session was about to begin.

Philip's bare and sterile room featured brightly waxed linoleum floors, salmon pink walls, and tubes for oxygen, suctioning of secretions, and water exiting from behind the bed. He had taped a poster of *Avalokitesvara,* the one-thousand-armed Buddhist saint of compassion, on the outside of the closed wooden bathroom door that faced his bed. A television attached by a maze of cables hung from the ceiling, looking down at his mechanized narrow bed, which was covered with thin hospital sheets. The air conditioning hummed loudly. He lay down on the bed and made himself as comfortable as possible.

Cindy smoothly and skillfully placed an intravenous line into one forearm vein. The blood pressure cuff was also wrapped around this arm. Philip's other arm had inserted into it a larger IV line from which we could draw blood, so we could measure concentrations of DMT in his blood after administering it. This line was attached to a clear plastic bag that dripped sterile saltwater into the vein so that there would be no clotting in the blood-drawing tube. Cindy and I sat on either side of Philip, not sure what to expect in light of Nils's earlier reaction. Robin sat off to the side, near the foot of the bed.

Philip, fresh from Nils's unnerving session only an hour ago, needed little preparation. He knew what to expect from us while he was lying in his bed under the influence. He had seen that we would help him immediately if he seemed in need of assistance. We wished him luck. He closed his eyes, lay back, took some deep breaths, and said, "I'm ready."

I watched the second hand of the clock on the wall, waiting for it to hit the "6" so that I could time the 30-second injection to finish when the second hand hit the "12," which would be "time zero." It was nearly 10 A.M.

Just as I finished inserting the needle of the syringe into Philip's line, but before depressing the plunger and emptying the DMT solution into Philip's vein, there was a loud, insistent knocking on the door. I looked up, paused, removed the needle from the line, capped it, and placed it on the nightstand next to Philip's bed.

The director of the Research Center laboratory was waiting outside the door. I stepped into the hall, out of earshot from the room. He said that the previous blood samples for DMT analyses were collected incorrectly, and that we needed to change how we did this. I told him we would modify our technique accordingly.

I let myself back into Philip's room and took the chair by the side of his bed once more. He seemed unaware of the interruption, having begun the inward turning and letting go that we found allows for the smoothest possible entry into the DMT realms. For him, the trip had already begun.

I apologized for the interruption and, trying to lighten the mood, said, "Where were we now?" Philip replied with only a grunt; he opened his eyes, nodded for me to proceed, and closed them again. I uncapped the syringe and reinserted the needle into his IV tubing. Cindy nodded that she was ready, too.

I said, "Okay, here's the DMT."

I slowly and carefully began infusing 0.6 mg/kg DMT into Philip's vein.

Halfway through the injection, Philip's breath caught in his throat, sounding like a cough that never quite got out. We quickly learned that whenever this catching in the throat followed a high-dose injection, we were in for a wild ride.

Quietly, I let Philip know, "It's all in."

Twenty-five seconds after the infusion was complete, he began groaning,

/ love, I love . . .

His blood pressure rose moderately, but his heart rate jumped to 140 beats per minute, up from his resting level of 65. This increase in pulse is equivalent to that which might occur after racing up three or four flights of stairs. But in this case, Philip hadn't moved an inch.

At 1 minute, Philip sat up, looking at Cindy and me with saucer-sized eyes. His pupils were hugely dilated. His movements were automatic, jerky, puppetlike. There seemed to be "no one home" behind Philip's actions.

He leaned toward Robin and stroked her hair:

/ love, I love . . .

Twice that morning, then: a volunteer in a dazed DMT state, attracted to a woman's hair. Nils to Cindy's, Philip to Robin's. Perhaps it was the most powerful image of living, organic, familiar reality available when one looked around a dreary hospital room in such a highly psychedelic state.

To our relief, he laid back down without prompting or assistance. His skin was cold and clammy, as had been Nils's. His body was in a classic "fight-or-flight" reaction: high blood pressure and heart rate, blood moving from the skin deeper into the vital internal organs, but all while he was performing almost no actual physical activity. It was difficult to draw Philip's blood—the high levels of stress hormones caused the tiny muscles lining the veins to clamp down, reducing unnecessary blood flow to the skin.

At 10 minutes, Philip began to sigh,

How beautiful, how beautiful!

Tears began streaming down his cheeks.

Now that was what you would call a transcendent experience. I died and went to heaven.

By 30 minutes after the injection, his pulse and blood pressure were normal.

It was flying within a vastness. There was no relative space or size.

I asked, "What did you feel when your breath caught in your throat?"

I felt a cold, contracting feeling in my throat. It frightened me. I thought maybe I would stop breathing. The thought, "Let go, surrender, let go," was therefor a split second, then the rush of the drug swept even that away.

"Do you recall sitting up and stroking Robin's hair?"

I did what?

Forty-five minutes after the injection, drinking tea and no longer feeling any effects of the drug, Philip could not remember sitting up, looking at us, or touching Robin. Soon thereafter, he seemed comfortable and we were confident Robin could look after him.

Philip and I spoke the following evening. He felt a little run down, but had slept very well. His dreams were "more interesting than usual," although not particularly bizarre. Nevertheless, he could not remember any

of them. He worked a full ten hours the next day, although "not at full steam." However, he said, "Nobody but I would have noticed I was tired."

Amazingly, these are all the notes I have from that session and the next day's report. This contrasts strikingly with Philip's usually quite eloquent descriptions of his drug sessions. Perhaps his getting through the morning safely was the most important information we needed to learn.

Driving home that evening into the mountains outside of Albuquerque, I used the time to think about the day's events. I was glad that both Nils and Philip had emerged intact from their 0.6 mg/kg IV DMT encounters. However, I had not learned much about what their experiences were really like. Their reports were remarkably brief and lacked detail.

Why were Nils's and Philip's reports so sparse?

One possibility was "state-specific memory." This refers to the phenomenon in which events experienced in an altered state of consciousness can be recalled clearly only upon reentering that state, and not in the normal one. This happens under the influence of substances such as alcohol, marijuana, or prescription drugs like the sedatives Valium, Xanax, or barbiturates. It also results from non-drug-induced altered states, such as hypnosis or dreams. In Philip's and Nils's cases, this explanation would be likely if they later recalled more of their 0.6 mg/kg sessions while working with lower, more manageable doses of DMT. However, this did not occur to any extent in either man during their subsequent participation in the project.

Another possibility is that Nils and Philip suffered a brief delirium, an "acute organic brain syndrome," or "acute confusional state." *Delirium* derives from the Latin *de*, meaning "from" or "out of," and *lira*, "a furrow"; literally, "going out of the furrow," or "out of it." Delirium can result from physical factors such as fever, head injury, lack of oxygen, or low blood sugar. In addition, a profoundly traumatic psychological experience may produce a delirious state, such as what happens in survivors of severe trauma or disasters.

I was uncertain to what degree "psychological trauma" contributed to Nils's and Philip's confusion in, and inability to remember much of, their

DMT sessions. How much was a psychological reaction to the drug's effects, rather than a direct effect of the drug itself? That is, climbing a ladder to view a scene of unimaginable shock value might throw one into a delirious or confused state, but it is not the ladder but rather the view the ladder provides that is responsible. Was what Nils and Philip saw so bizarre, so incomprehensible, so utterly aberrant that their minds simply turned off to spare them from seeing clearly what was there? Maybe it was better to forget.

In either case, whether too much drug or too much experience, whatever 0.6 mg/kg IV DMT did to these two seasoned psychedelic veterans, it came down to just this: "too much." As Philip said later,

It was a cosmic blowtorch, a tempest of color, bewildering, like I was thrown overboard into a storm and was spinning out of control, being tossed like a cork.

I called Dave Nichols again to discuss the DMT dose. What should be a lower "high" dose? A reduction to 0.5 mg/kg would be lowering the dose by only one-sixth, while 0.4 mg/kg was fully one-third less. We went back and forth. While I wanted to make certain the high dose elicited a full effect, I did not want to psychologically traumatize our volunteers. I was feeling a little tentative after the day's events with Philip and Nils. "First, do no harm" is the overriding dictum for medicine in general, and even more so for human research. Creating a group of psychically damaged volunteers was not an option. Keeping the effects of Philip's and Nils's 0.6 mg/kg sessions in the forefront of our discussion, we decided to make 0.4 mg/kg the top DMT dose for the study.

A few days later, I called the early DMT pioneer Dr. Stephen Szara to discuss these dosage issues. Dr. Szara had discovered the psychedelic effects of DMT by injecting it into himself in his laboratory in Budapest, Hungary, in the mid-1950s. (During the first phases of human psychedelic research, it was common for the researchers themselves to "go first.") He now was completing a long and distinguished career at the U.S. National Institute on Drug Abuse in Washington, D.C.

I asked him, "Did you ever give too much DMT to your volunteers?"

Dr. Szara thought for a moment, then answered in his refined Eastern European accent, "Yes. They could not remember anything. They could not bring back memories of the experience. The only thing that remained with them was the feeling that something frightening had happened. We did not believe it worthwhile administering those kinds of doses."

It is fascinating how many of the themes that would emerge over the next five years appeared that December morning when I administered 0.6 mg/kg IV DMT doses to Philip and Nils. We hear about near-death and spiritual experiences, and contact with "them" in the DMT realms. I felt conflicting priorities around friendship and research goals. The drawbacks of the hospital setting and medical model quickly were apparent. The need to give full psychedelic doses was already tempered by an awareness of their potential for negative reactions. There was a far-flung network of colleagues and regulators who variously assisted the project. All were there in some form or another in Philip's and Nil's 0.6 mg/kg IV DMT sessions.

Let's now turn to the background for this research, the vast amount we know about psychedelic drugs, and the way our science and society have used that information. Then we can begin to understand the unique role DMT plays in our bodies, and the astonishing functions it may serve in our lives.