update on university of new mexico studies

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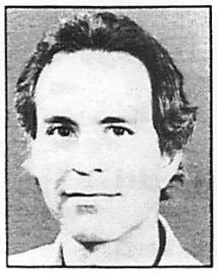

AFTER A QUIET SPRING, we have begun another DMT study, attempting to determine what brain receptors mediate this its effects. After our pindolol study, where serotonin (5-HT)-1A receptor blockade enhanced the psychological effects of DMT, we are now investigating the role of the 5-HT-2 subtype of serotonin receptor. We had been hoping to use the selective and specific 5-HT-2 blocking drug, ritanserin, for this study, but failed to obtain it after several years of negotiations with the company that makes it. Anticipating using ritanserin with DMT, Dr. Mark Geyer and Kirsten Krebs, one of his graduate students, kindly performed some toxicity studies in rodents combining DMT with ritanserin, and determined the combination was safe. However, this was to no avail. We have settled on a less satisfactory drug, but one that is readily available by prescription. This is an antihistamine called cyprohepta-dine, also known as Periactin, which has potent 5-HT-2 blockading effects. One of the advantages of using cypro-heptadine with DMT is that a University of Chicago study in the 1970s combined the two drugs in humans, and noted no adverse effects, although the degree of modification of DMT's effects was equivocal. Animal studies using cyproheptadine to block hallucinogens effects, however, seems relatively consistent, although there are exceptions.

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DMT Research

This will be a similar study to our pindolol one, in which case volunteers come in for all possible (i.e., four) combinations of DMT or placebo-DMT, and cyproheptadine or placebo-cyproheptadine. We will look at effects on endocrine markers (ACTH and prolactin), cardiovascular responses (blood pressure and heart rate), temperature, and psychological responses using clinical interviews and the Hallucinogen Rating Scale (HRS). We are now determining the optimally safe combination of doses to use for this study, in a small group of volunteers. Once these are determined, 12 people will participate.

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Psilocybin Research

We also hope to begin some preliminary work with oral psilocybin this summer. Our first goal will be to determine an appropriate range of doses of psilocybin. Hofmann originally described 6 mg as "hallucinogenic," while a German group some years ago administered 90 mg, and was able to perform complex psychological testing on their volunteers. Leary, Metzner and Alpert gave 60 mg in their Harvard studies, and the highest dose I could find in the traditional psychiatric literature was 32 mg, with a 20 mg threshold before psychedelic effects were noted. I have spoken with the investigators in Zurich who are performing a PET scan study of psilocybin effects, and they state that 15 mg is clearly active. We will begin with 4-5 mg (in a 70 kg person), and gradually increase the dose until full psychedelic effects are noted. We will also have determined a "very low" dose, in which case people can barely, if at all, tell they have received a drug. Then, we will calculate two intermediate doses. Once we have determined these doses, we will perform the full study in 12 people.

Dose-Reponse Study

This will be a dose-response study, identical to our original DMT study. Volunteers will receive initial "screening" low and high doses of psilocybin, to see if they are comfortable in the hospital setting. No blood drawing or other invasive procedures will be done. If the initial days go well, they will come in 5 times for 4 doses of psilocybin and placebo, with blood drawing and temperature monitoring (using a ear drum thermometer, that takes only seconds to use, rather than our infamous rectal probe!). We will measure blood levels of psilocybin, ACTH, growth hormone, prolactin and cortisol. We also would like to measure psilocin, the de-

phosphorylated form of psilocybin, which is believed to be the active compound, psilocybin only acting as a precursor to psilocin.

We are a little apprehensive about how to manage the at least 6 hour psilocybin sessions in our little room on the Clinical Research Center. DMT effects are so short that we have found the room to be completely suitable. What to do during a 6-8 hour session in the hospital will be more of a challenge. We hope to use our same, non-intrusive style of sitting for people, encouraging volunteers to use eyeshades and lay in bed for as long as they comfortably can, using the hospital environment to go into the state as fully as they can. We have comfortable chairs, and a desk, for writing, reading, and art work (see below). However, I clearly anticipate people will want to walk around the ward and stretch their legs during the day, which will take some educating the ward staff on the research unit.

We will also be performing more psychological assessments of volunteers, than just the HRS. We will be giving volunteers the opportunity to express their experiences using art media, in a project initiated by Tamara Allen, an Art Therapy graduate student at the University of New Mexico. This will be a pilot project, determining if the nature of the art productions while under the influence of psilocybin are different than those under placebo conditions, and if so, how they differ. What would be most interesting is to see if there is a dose-response relationship; that is, the higher doses producing greater alterations in the art. Interpretation of these data may shed some light on the nature of how psilocybin affects the symbol-making processes of the mind and brain.

In addition, we will tape-record 30-minute monologues from volunteers at some point in their sessions, for later transcription and scoring by Dr. Robert Langs from the Nathan Kline Psychiatric Research Center in Orangesburg, NY. Dr. Langs is one of the earliest American LSD researchers, and was the "Langs" of the "Linton-Langs" questionnaire, one of the standard rating scales used for hallucinogen effects. Dr. Langs is a renowned psychoanalytic educator and therapist, and has published extensively on the "psychotherapeutic field" that exists between therapist and patient. Inspired by Ralph Abraham's mathematical modelling on non-linear processes, he has recently developed a system of scoring monologues or dialogues that reveal "deep structure" of emotionally-charged language.

Therapeutic Potential

Both of these pilot projects will begin the painstaking process of seeing if and how psilocybin in particular, and hallucinogens in general, may affect mental processes in such a way as to be called "therapeutic" or somehow helpful in one's thinking, feeling, and image formation. It is our belief that "psychotherapy" protocols using these drugs must have a theoretical basis for their application, and not rely upon purely empirical, impressionistic, or intuitive "shots in the dark." By so doing, valid, testable, and "communicateable" process can be built up for other centers to use in their work, and sophisticated psychotherapy protocols can be devised for use in particular disorders in which hallucinogens' effects can be exploited for useful purposes.

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Book Plans

Last but not least, the book on the DMT studies, partially supported by generous MAPS donations. We failed to interest any of the New York publishing houses our agent sent it to. We are revising it now, and will send it off to several more publishers, taking into account the many suggestions contained in our rejection slips. If this next level of publishers fail, we will consider taking the self-publication route. ■