

This paper hopes to assist the court in understanding some of the confusion surrounding MDMA by examining the various problems surrounding MDMA's scheduling, the evidence that it causes brain damage (or the lack thereof) and the nonabusive and beneficial properties of MDMA

Scheduling Concerns

MDMA is currently Schedule I, having no "acceptable medical use" in the United States. That decision was based on erroneous science.

MDMA was first synthesized in 1912, although it remained unknown until the mid-1970s when various small groups of therapists and researchers began exploring its potential in self-actualization therapy. MDMA is structurally similar to both mescaline and amphetamine, and produces a euphoric effect as well as an empathogenic effect, experienced by the user as both optimistic and relaxed for four to six hours.^{1 2} Communication between individuals is enhanced, with counter productive ego defenses lessened. Couples with marital issues and post-traumatic stress victims experience a healing catharsis and are better able to function afterwards. As there exists no other such psychological tool, therapists who were introduced to the material began to encourage its use therapeutically. Thus for the first ten years of its re-emergence MDMA moved surely and carefully through a network of therapists and physicians.³

By 1983, an aggressive marketing campaign had begun in Texas and California where the drug was marketed as "ecstasy." This transformation occurred when cocaine dealers tried the

¹ Empathogenic is defined as being able to engender an emotional bonding between people and few pharmaceuticals can elicit this positive effect in humans.

² Nichols, David. The Chemistry of MDMA in *Ecstasy: The Complete Guide*, Julie Holland, ed. (2001) Rochester, Vermont: Park Street Press.

³ Stolaroff, Myron. (1997) *The Secret Chief: Conversations with a Pioneer of the Underground Psychedelic Therapy Movement*. Charlotte, NC: MAPS Press.

Additionally the underground psychedelic therapy movement has received considerably press lately. An ABCNews special titled *Ecstasy Rising* was aired April 1, 2004. Most recently the Altnet news service ran a story on October 6, 2004 titled "A Long strange trip for psychedelic drugs" which covered underground MDMA therapy.

material and realized its potential.⁴ The predominant use shifted from therapeutically to recreational.

The fate of MDMA was sealed in 1985 when the DEA, citing research by the current head of NIDA Dr. Charles Schuster on a different compound MDA, placed MDMA on an emergency basis in Schedule I. During the hearing process, defenders of MDMA's legal use, members of the American Medical Association (AMA) and the American Psychiatric Association (APA), argued for it being placed in Schedule III, so that medical doctors could continue to legally prescribe the valuable empathogenic drug. Scientific research in the material could continue unobstructed, but recreational use would be criminalized. Among the supporters testifying were Harvard University professor Lester Grinspoon, Dr. Morris Lipton a psychiatrist and editor of the *American Journal of Psychiatry*, and Dr. Robert Lynch who was the statewide psychiatric consultant for California.⁵

The DEA's attorney however argued that a drug need not cause any actual harm but only that there exist a high potentials for abuse. In May 1986, DEA Administrative Judge Francis Young gave his ruling in favor of placing MDMA in Schedule III. The DEA Administrator placed MDMA in Schedule I. This decision was appealed and in September 1987 was found flawed. But after several months the DEA placed MDMA back into Schedule I by "devising a new rationale whereby placing drugs in Schedule I eliminated all approved uses of Schedule I drugs." (see this in the original) This MDMA scheduling was again found to be illegal in the courts, because the DEA has no legal authority to emergency declare any drug scheduled. Nevertheless in 1986, under the Designer Drug Law that MDMA was made illegal, Schedule I.⁶

A result of the media attention and publicity surrounding the scheduling of MDMA, is that recreational interest in MDMA greatly increased. It is reasonable to assume that had the material not been scheduled that the slow pace of growth that patterned the first decade of use

⁴ Eisner, Bruce. (1989). *Ecstasy: The MDMA Story*. Berkeley: Ronin.

⁵ DEA hearings held by Judge Francis Young on MDMA, Feb. 1 1985.

⁶ Rosenbaum, Marsha and Rick Doblin. Why MDMA should not have been made illegal, in *The Drug Legalization Debate*, James Inciardi, ed. Studies in Crime, Law and Justice series Vol 7 (1991) Sage Publications.

would have continued. As general interest in MDMA increased, so did the margin of profitability in illegal MDMA distribution. This increase also led to an increase in adulteration of MDMA supplies. As noted by the Sentencing Commission on Ecstasy emergency re-scheduling 2 February 2001, “most serious ill effects have been from chemicals that were marketed as MDMA but did not actually contain it.”⁷ Every year a greater percentage of pills marketed as MDMA contain something else and of course increased adulteration only continues to increase individuals’ ill effects attributed to but not caused by MDMA.⁸

Scheduling had a negative effect on the therapeutical use of MDMA and far fewer people were able to use it with therapists, although there remain some underground therapists as has been much noted in popular press these last few years.⁹

MDMA doesn’t lend itself well to being abused. Frequent use quickly results in an increasing number of unpleasant effects combined with a near total lack of desired effects. Thus while some individuals’ use quite frequently in being introduced to MDMA, they taper off their use quickly in order to derive maximum benefit.¹⁰ MDMA is a drug that promotes self-reflection, can only be used enjoyable every few weeks, and is unpleasant to overuse.

The supposed health hazard/potential abuse damage cited by the DEA was brain damage. That assumption was incorrect from the beginning. The originally quoted study involved MDA and not MDMA. At the time of MDMA’s scheduling little actual scientific research had

⁷ Comments received by the Sentencing Commission on Ecstasy emergency re-scheduling 2 February 2001 Schifano, F., Oyefeso, A., Webb, L., Pollard, M., Corkey, J., and A. Ghodse. Review of deaths related to taking ecstasy, England and Wales, 1997-2000. (2003) *British Medical Journal* 326:80-81. This study, funded by the British National Program on Substance Abuse (the British NIDA) is the only one to actually investigate mdma deaths, and discovered that of the 81 deaths attributed to MDMA during the four year period in Britain only 6 could actually be considered MDMA deaths. Furthermore those deaths were attributed to “malignant hyperthermia/hyperpyrexia or an overheated body.

⁸ This information is freely available at www.dancesafe.org.

⁹ Stolaroff, Myron. (1997) *The Secret Chief: Conversations with a pioneer of the underground psychedelic therapy movement*. MAPS: Charlotte, NC.

¹⁰ Beck, J., Harlow, D., McDonnell, D., Morgan, P., Rosenbaum, M., & Watson, L. (1989). *Exploring Ecstasy: A Description of MDMA Users* (Grant No. 1 R0 1DA04408). Final report to the National Institute on Drug Abuse. Rosenbaum, M., Morgan, P., & Beck, J. (1989). Ethnographic notes on “ecstasy” use among professionals. *International Journal on Drug Policy*, 1 (2).

been done with MDMA in the United States. That situation quickly changed as NIDA poured monies into studies examining the dangers of MDMA use.

The man who has made his career off the medical demonization of MDMA and who has received the lion's share of funding from NIDA for doing so is John Hopkins University's George Ricaurte.¹¹ Now for almost two decades Ricaurte's (and his associates McCann, Szabo et al) research into MDMA has been primarily centered on the believed neurotoxicity risks associated with MDMA. They framed their research questions to examine specifically the supposed risks of MDMA's interaction with the serotonin and dopamine neurotransmitters.¹²

MDMA and serotonin

In 1998 Ricaurte and his associates made the claim from their PET studies of former ecstasy users demonstrated that MDMA causes damage to the brain by causing massive reductions in serotonin.¹³ This study was the sole source for the National Institute on Drug Abuse's now withdrawn anti-ecstasy campaign. This campaign can be most remembered for the now discredited television ads showing gaps in the brains of ecstasy users. The ads were timed to further designer drug laws. The data from this and similar studies is now considered by the medical establishment to be so methodologically flawed as to be totally useless. A subsequent, better-controlled and much larger study (involving four times the number of former ecstasy users) found "serotonin levels identical to that of the control studies." Furthermore, this methodologically sound study chose its former ecstasy users on the basis of the large number of doses consumed, an average of 799 doses.¹⁴ Unfortunately whereas mainstream medical

¹¹ Ricaurte has received some \$16million to date. Freedom of Information Act request filed by MAPS (Multidisciplinary Association for Psychedelic Studies).

¹² Grob, Charles. (2000) Deconstructing Ecstasy: The Politics of MDMA Research. *Addiction Research*, Vol.8 No.6, pp 549-588.

¹³ McCann, UD., Szabo, Z., Scheffel, U., Dannals, RF., Ricaurte, GA. (1998) Positron emission tomographic evidence of toxic effect of MDMA ("Ecstasy") on brain serotonin neurons in human beings. *Lancet* 352: 1433-7. Ricaurte, GA., DeLanney, LE., Irwin, I., Langston, JW. (1988) Toxic effects of MDMA on central serotonergic neurons in the primate: importance of route and frequency of drug administration. *Brain Res* 446: 165-168.

¹⁴ Buchert., R., Thomasius, R., Nebeling, B., Petersen, K., Obrocki, J., Jenicke, L., Wilke, F., Wartberg, L., Zapletalova, P., Clausen, M. (2003) Long-term effects of "ecstasy" use on serotonin transporters of the brain investigated by PET. *J Nucl Med*. Mar;44(3):375-84.

science considers the Ricaurte PET study to be flawed, the damage has been done and most lawmakers, the public and the media continue to believe the disinformation.

MDMA and Dopamine

This landscape however may be changing, and if so this would be primarily due to Ricaurte's stunning retraction last year in the *Journal Science* (September 5, 2003) of his earlier research examining the dangers of MDMA for dopamine. The man whose research has been most relied upon by the DEA in its claims of MDMA neurotoxicity has now had to "acknowledged that their evidence about MDMA damaging dopamine neurons was erroneous and was based on the mistaken administration to their primates of methamphetamine instead of MDMA, due to the mislabeled 10 gram bottles of MDMA and methamphetamine which arrived from the same provider in the same package." (A claim that the manufacturer RTI International continues to deny, and certainly never before has such a case of a Schedule I compound being so mislabeled occurred.)¹⁵ This sounded incredulous to the scientific community that a medical researcher would mix up his Schedule I compounds¹⁶. Despite the clear flaws in his research, more than anyone else Ricaurte's work has been the source of the ongoing misperception created in the minds of the general public, regulators, lawmaker, courts by NIDA/DEA/Partnership for a Drug-Free America. That we have come to know as fact that a number of his MDMA studies were not conducted with MDMA is a critical fact that is simply ignored by those who wish to rely on his flawed findings.

An editorial in the premier science journal *Nature* accused the former NIDA director Leshner, now the director of the American Association for the Advancement of Science (AAAS) which publishes the journal *Science* of "pandering to the Bush administration's jihad against recreational drug use" and questions how Ricaurte's work was published at all given the fact that his research hasn't been replicable.¹⁷ Replicability is one of the criteria for scientific

¹⁵ Ricaurte, GA., Yuan, J., Hatzidimitriou G., Cord, BJ., McCann, UD. (2003B) Retraction. *Science* 301:1429. John, Leo. 2003. RTI denies it made mistake that torpedoed results of a \$1.3M study. *Triangle Business Journal*, American City Business Journals, Inc.

¹⁶ Morris, Kelly. "Concern over research awakens ecstasy neurotoxicity debate", editorial in *Lancet*, Vol 2, November 2003.

Walgate, Robert. "retracted Ecstasy paper an outrageous scandal," editorial in *The New Scientist* Sept 16, 2003.

¹⁷ Morris, Kelly. "Concern over research awakens ecstasy neurotoxicity debate", editorial in *Lancet*, Vol 2, November 2003.

publications. As research on MDMA in Europe has continued unfettered, and no European researcher was able to replicate Ricaurte's results.

On September 18, 2003 Ricaurte retracted yet another paper.¹⁸ And further retractions are likely, given that only 2.25 grams of the original 10gram vial of "mislabeled methamphetamine" can be accounted for. Given the fact that these are Scheduled I compounds, these materials should not go missing. On October 20, 2003 the Multidisciplinary Association for Psychedelic Studies filed a FOIA request to NIDA to find out where the rest of the mislabeled vial went, and what other studies need retracting. The results of this investigation are anxiously awaited by the medical professionals who wish to see MDMA depoliticized.¹⁹

In addition to damaging the brain's dopamine cycle, Ricaurte had claimed, "ecstasy causes Parkinson's disease".²⁰ This too has been refuted, as ironically recent research has now shown that MDMA "when administered with L-Dopa actually helps reduce dyskinesias, the painful symptoms of Parkinson's." ²¹ NIDA doesn't encourage the publication of this kind of MDMA study and the public and lawmakers seem to only remember the earlier rhetoric.

Remarkably even after more than 11 million doses of MDMA taken in the USA, the medical literature "does not contain even one case of an individual suffering neurological symptoms linked to MDMA-related brain damage."²² And the lack of such evidence hasn't been for the lack of trying. Additionally even when massive doses of the material are given to rats and

Grob, Charles. (2000) Deconstructing Ecstasy: The Politics of MDMA Research. *Addiction Research*, Vol.8 No.6, pp 549-588.

¹⁸ PB Boot, Mehan, AO., McCann UD., Ricaurte, GA., MDMA and p-chlorophenylalanine-induced reduction in 5-HT concentrations: effects on serotonin transporter densities. *Eur J Pharmacol* 453:239-244.

¹⁹ Morris, Kelly. "Concern over research awakens ecstasy neurotoxicity debate", editorial in *Lancet*, Vol 2, November 2003.

Walgate, Robert. "retracted Ecstasy paper an outrageous scandal," editorial in *The New Scientist* Sept 16, 2003.

²⁰ September 6, 2002 issue of New Scientist

²¹ Irvani, MM., Jackson, MJ., Kuoppamaki, M., Smith, LA., Jenner, P. (2003) 3,4-methylenedioxyamphetamine (ecstasy) inhibits dyskinesia expression and normalizes motor activity in 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine-treated primates. *J Neurosci*. Oct8;23(27):9107-15.

²² Opening statement by Dr. Jorg Roth, Research Director, of the Swiss Association of Physicians for Psycholytic Therapy, at the Pharmacologically-assisted Psychotherapy Conference held in Bern Switzerland, Nov 28- Dec1, 1990. Medical research and MDMA therapy has continued to be conducted in Switzerland, where MDMA has been found to be beneficial in the treatment of depression, addictive behaviors and anorexia.

primates, “all evidence shows such changes are temporary.”²³ Furthermore, SSRIs induce these very same temporary changes, and they remain one of the most commonly prescribed and most profitable drugs in America. With Ricaurte studies now invalidated one would hope for a new era of scientific and legal understanding of pharmaceutical MDMA.

A new era of scientific understanding may be at hand, as the first MDMA trial has begun under the stewardship of Dr. Mithoefer in South Carolina in February 2004. Having received both the FDA’s and the DEA’s approval, Mithoefer has begun the first MDMA-assisted psychotherapy research project since MDMA was criminalized.²⁴ The very fact these agencies approved this human trial demonstrates that science may prevail after all, and that MDMA will find its rightful place in our society. Their approval also evidences the fact that much of the prevalent understanding of MDMA as espoused by Ricaurte and others is tragically incorrect.

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²³ Battaglia, G., Yeh, SY., DeSouza, EB. (1988). MDMA-induced neurotoxicity: parameters of degeneration and recovery of brain serotonin neurons. *Pharmacology, Biochemistry and Behavior*, 29+269-74.

Ricaurte, G. (1988). *Abstract*. Annual meeting of the Society of Neurosciences.

²⁴ The protocol can be examined at <http://www.maps.org/mdma/protocol/index.html>