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The Scheduling of MDMA: A Pharmacist's Perspective

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The United States Drug Enforcement Administration (DEA) attempted last year to place the drug 3,4-methylenedioxymethamphetamine (MDMA) in Schedule I of the Controlled Substances Act without holding public hearings on the matter. In order to place a drug in Schedule I, it must be shown to have both high abuse potential and no accepted medical use in the United States. This author was one of a number of health care professionals who filed formal protests that compelled the DEA to set up three such hearings through the latter part of 1985—one in Los Angeles, one in Kansas City and another in Washington, D.C. The following is adapted from the author's original letter of protest to the DEA and her written testimony as a scheduled witness endorsing MDMA's low potential for abuse and beneficial therapeutic applications.

MDMA'S POTENTIAL FOR ABUSE

The DEA's approach to drug control implies certain criteria by which it determines a drug's abuse potential. These criteria include: (1) illegal use; (2) similarity to other drugs with known abuse potential; and (3) potential to induce addiction or other harmful side effects. The DEA's preliminary statements in the matter of MDMA scheduling condemn the drug on all three points, explicitly or implicitly. It should therefore be considered, point by point, if such conclusions by the DEA are valid.

Illegal Use of MDMA

The first criterion maintains that illegal use of a controlled substance constitutes abuse. At first it is hard to see how this applies to MDMA, which as of this writing is not yet controlled as a scheduled drug, but the DEA offers the following argument: Reports from field agents, halfway houses and other street sources suggest that MDMA has been used by drug abusers, who use other illicit drugs as well and who would presumably continue to use MDMA if the DEA placed it in Schedule I. Insofar as this would then constitute abuse (i.e., illegal use of a controlled substance), the DEA concludes that MDMA has a high abuse potential and deserves to have a Schedule I classification. This is, first of all, circular logic and therefore fallacious. Second, it is based on unreliable data.

Consider the context and source of this data. The DEA has stated its concern that MDMA can be produced, and reportedly has already been so, in clandestine laboratories for sale on the street. This is, of course, a real concern. Physicians and pharmacists, for example, depend on the fact that the drugs that are dispensed are consistently pure and of uniform, guaranteed potency. No such assurance can be had regarding street drugs manufactured in clandestine labs. Another problem is the frequent duplicity of dealers who distribute the illicit drugs: They misrepresent what they are selling in order to meet the expectations or demands of drug users. It is easily conceivable, for instance, that if customers are asking to buy MDMA, a dealer might sell something that s/he claims is MDMA, but which is actually methylenedioxyamphetamine (MDA), amphetamine or possibly a mixture of the two. The additional problem of polydrug abuse—the tendency of many drug abusers to take several drugs simultaneously and/or indiscriminately—is another

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good reason to question the DEA's curious faith in information it obtains from drug abusers. The abusers themselves may not know what they are taking.

Yet, the DEA refuses to acknowledge that these variables undermine the value of its streetwise information. Instead, the DEA has lined up witnesses whose testimonies seek to exploit this lack of certainty. Thus, Darryl Inaba, a doctor of pharmacy, is scheduled to testify as follows, according to the DEA's prehearing statement (1985):

> Dr. Inaba will testify that he is the Director of the Haight-Ashbury Free Medical Clinic in San Francisco, California. He will further testify that he sees about three patients a month at the clinic who say that they have taken MDA, ADM, MDMA or Ecstasy. Although Dr. Inaba cannot be certain how many patients actually took MDMA, he will testify that users of MDA, ADM and MDMA are treated by the clinic in the same manner. Dr. Inaba will describe the symptoms and characteristics evidenced by those who use substances of this type.

In other words, Dr. Inaba cannot say if he is dealing with people who took MDMA or perhaps MDA or some other drug. However, he treats them the same. So the DEA wants to conclude that all drugs "of this type" are the same in their effects and their abuse potential. This too is false reasoning.

MDMA's "Similarity" to MDA

The DEA's second criterion for drug abuse potential is the similarity of one drug (e.g., MDMA) with another having known abuse potential (e.g., MDA). The DEA seems to believe that because MDMA's molecular structure is similar to that of MDA, it is guilty by association. That would be a fair assumption if it were not for the fact that MDMA and MDA show opposite isomer activity in affecting the central nervous system. The DEA acknowledges this difference (and then ignores it) in its recommendation to place MDMA in Schedule I, where it cites the research findings of Nichols and other researchers (1982). According to the DEA's report, prepared by its Drug Control Section (1984):

> It has been suggested that the active ("R") isomer of MDA might act by a direct receptor effect while the active ("S") isomer of MDMA might work by the release of an endogenous neurotransmitter (Nichols, et al., 1982). Nichols, et al., studied the isomers of MDA and MDMA for their effect on the release of (^{3}H) serotonin from whole rat brain synaptosomes. No differences were noted in the potencies of the MDA isomers while the "S" isomer of the MDMA was more effective in inducing the release of the neurotransmitter than the "R" isomer. Since it is the "S" isomer of MDMA which is the active enantiomer, the activity of MDMA may be due to the release of the serotonin transmitter.

Consequently, though MDMA and MDA have similar molecular structures, there is reason to believe that they have different physiological effects. An illustration is provided by two common drugs with an even closer structural relationship: quinine and quinidine. These drugs are diastereoisomers: They have the same molecular structure, but with different stereoisomers. The result of this configurational isomerism is that quinidine performs as a cardiac suppressant—a specific effect—whereas quinine, with more general effects, is prescribed to treat malaria as well as leg cramps and is used as a sclerosing agent.

Is MDMA Addictive?

A third criterion by which the DEA judges if a drug has abuse potential is the potential to induce addiction. Is MDMA addictive, either physically or psychologically? Probably not, but some qualification is needed because MDMA is a drug whose effect is primarily psychological. As Alan Otten (1984), a reporter for the *Wall Street Journal*, pointed out in an article on the problem of drug abuse: "Complicating all discussion and policy making is the surprising lack of knowledge about almost every aspect of those drugs that alter mood, thought and behavior. Despite years of research, there is little agreement on such basic questions as whether the cause of addiction is physiological, psychological, environmental or some of each. . . ."

There is no evidence, at any rate, that MDMA is physically addictive. Nor does the DEA claim that it is addictive. The drug's possible physical side effects—including blurred vision, muscle tightness of the jaw and/or sweating—are more likely to *discourage* frequent use or high-dosage abuse.

Psychological addiction is much harder to dismiss because it is harder to define. MDMA is a psychotropic drug and its main effect is on the psyche via brain chemistry. The psyche, however, unlike the heart, eyes, liver, pancreas and other human physiological systems, is not well understood by medical science. Thus Jonathan Winson (1985) concluded in his excellent book *Brain & Psyche:* "Neuroscience is slowly unraveling many aspects of brain function, such as the way the sensory world is perceived and remembered and how the brain controls the action of our muscles and bodies. It is working toward, but is still distant from, an understanding of the biology of the psyche." Most people probably do not appreciate how

far we really are from such an understanding and what little we do know is often distorted by sensational and frequently inaccurate stories on drug abuse that appear in the various mass media. Spiegel and Aebi (1984) observed in their book *Psychopharmacology* that "even the mass media has brought numerous contributions over the last ten years reflecting the manifest or latent fears of, and prejudices against, psychopharmaceuticals. The emphasis in such articles is usually on the side effects of these medicaments, on the risk of addiction, and on the manipulative, anti-emancipatory nature of psychopharmaceutical prescriptions."

Considering, therefore, that psychobiology is still an immature science and that many attempts to evaluate effects of psychotropic drugs are clouded by prejudices, fear and suspicion, it is difficult to ascertain conclusively if psychotropic drugs, such as MDMA, are addictive psychologically. It is quite possible that many such drugs that are not physically addictive can appear to be addictive when repeatedly used in a limited time frame by people embracing a new kind of high. There are also drugs, such as Valium®, that are so popular, so frequently prescribed and so accepted as legitimate that people hardly notice their widespread abuse.

The problem is not the drugs themselves. As Freud (1905) pointed out, "only the addiction-prone become addicts." Subsequent studies by many researchers whose findings are cited in Long and Scherl (1984) appear to confirm that "drug abuse is not a matter of chance even if initial contact with drugs may be and that compulsivity only develops when it meets some preexisting personality need." Even one of the DEA's own witnesses, Ronald Siegel, is on record as saying (Van Der Horst 1980):

> I'd like to see laws more in tune with psychopharmacological reality. There is a notion in our country today that drugs are magical elixirs that will transform people into either geniuses or maniacs. They're not. There are dangerous, homicidal, combative people who take drugs, however, and become more so. But it's not the drug, it's the personality. The drug triggers the underlying personality and any pathology that may be there. It never ceases to amaze me how much resistance we have built up to accepting that very simple fact.

MDMA seems to have no such trigger effect. In fact, it may even inhibit the abuse of other drugs. Some of the DEA's scheduled witnesses claim that they have interviewed addicts in their clinics who admit to taking MDMA. From this, the DEA concludes that MDMA is just another drug of abuse. But if, as two psychiatrists reported in an article in *Newsweek* magazine (Unsigned 1985), MDMA "helps people to get in touch with feelings which are ordinarily not available to them [and] makes it easier to look at the issues in [their] life," then possibly MDMA is the reason—a *positive* reason—that the addicts came into the clinics for help in the first place. It is also notable that Greer (1983) reported "decreased use of addicting substances" for some of his patients who took MDMA. Based on all the foregoing reasons, it seems that MDMA has only a very limited potential for abuse.

MDMA'S THERAPEUTIC VALUE

The DEA argues that MDMA has no accepted medical use in treatment in the U.S., but the DEA's perspective in such matters is one-sided. It is chartered to enforce the nation's drug control laws, not to help promote the use of beneficial therapeutic drugs. One can certainly share the DEA's concern about controlling drug abuse. However, the fundamental question of import is whether or not a drug's potential benefits outweigh the risks. From this perspective, the DEA is wrong in its assessment of MDMA's therapeutic potential.

MDMA does show significant promise for medical use in treatment in the U.S. In order to arrive at this opinion one must consider three questions: (1) What are the positive effects ascribed to MDMA; (2) Do these positive effects outweigh potential harmful side effects, including the potential for abuse; and (3) Does MDMA fill a therapeutic need that is not currently provided by a safer and/or more effective drug? The answers to these questions are in many cases intertwined, and it is therefore somewhat problematic to address them in sequence. Instead, all three points will be covered in the following remarks concerning MDMA's established value as a tool for psychotherapy and two hypothetical applications in the treatment of depression and childhood autism.

MDMA's Value as a Psychotherapeutic Facilitator

The positive effects of MDMA were systematically explored in formal studies by Shulgin (1981), Greer (1983) and others. These researchers used pure MDMA in doses of precise potency. Shulgin concluded that MDMA is a psychotropic "catalyst" that functions as a sensory "disinhibitor." It helps to promote an attitude of confidence and trust between users and therapists. Greer, a psychiatrist, reported that MDMA helped facilitate communication between his patients and himself, and appeared to reduce their psychological problems even after the sessions had ended. They commonly experienced improvements in their self-esteem, mood and interpersonal relationships. Claudio Naranjo, a psychiatrist who administered the drug to more than 30 patients, has been quoted as saying (Shafer 1985): "The MDMA experience is something like artificial sanity, a temporary

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