distribution research. APA also acted as a central coordinator of the grassroots lobbying effort that was undertaken by the 65 NIDA-funded research sites across the country. Working with the White House, APA also proved instrumental in getting HHS to issue a statement of support for the program. This ultimately proved essential in turning the Senate around. The parliamentary effort involved a significant amount of fancy foot work. Although they had originally opposed the bleach distribution program at the outset by large margins, by the time the bill got back to the Senate for the last time, enough Senators had heard the educational message from the scientific community, and the supportive letter from HHS had arrived. These factors provided the needed political cover, and the funding of the bleach distribution programs was retained. Continued vigilance is critical in this area of AIDS policy. The IVDU community, unlike some of the other AIDS-affected populations, does not have an organized presence in Washington. Given this and their stigmatized and vulnerable position leaves them open to regular political attack. Without the help of the scientific community in this example, a major tool of AIDS prevention would have been lost.

SYMPOSIUM

The Current Status of Human Drug Discrimination Research
Chair: *Alison H. Oliveto*, University of Vermont, Burlington, VT
Discussant: *Donald Overton*, Temple University, Philadelphia, PA

DISCRIMINATIVE STIMULUS EFFECTS OF DRUGS IN HUMANS: STIMULANTS AND SEDATIVES. Stephen J. Heishman. Addiction Research Center, National Institute on Drug Abuse, Baltimore, MD; Richard J. Lamb. University of Medicine and Dentistry of New Jersey, Camden, NJ; Jack E. Henningfield. Addiction Research Center, National Institue on Drug Abuse, Baltimore, MD.

Much research has evaluated the discriminative stimulus effects of psychoactive drugs in animals. Recently, analogous drug discrimination paradigms have been developed for human testing. In two similar studies, subjects were trained to discriminate *d*-amphetamine 30 mg PO (Drug A) from placebo using a color tracking procedure with second-order scheduling. Daily experimental sessions tested one oral drug dose or placebo. All subjects readily acquired the discrimination and reported increased subjective ratings of drug liking, drug strength, and good drug effects after *d*-amphetamine compared to placebo. In the first study, subjects were then tested with *d*-amphetamine (3.75–30 mg), diazepam (5–40 mg), and methylphenidate (7.5–60 mg) to determine if the discriminative stimulus effects of these drugs would substitute for Drug A. In the second study, generalization testing involved the same doses of *d*-amphetamine and hydromorphone (2–12 mg). In both studies, *d*-amphetamine produced dose-related *d*-amphetamine-appropriate responding. Methylphenidate also substituted for the Drug A stimulus in a dose-dependent manner. In contrast, neither diazepam nor hydromorphone engendered Drug A-appropriate responding. These generalization data indicate that the learned drug discrimination was pharmacologically specific. Subjective drug effects collected concurrently with generalization testing revealed interesting data on the relationship between subjective and discriminative stimulus effects. In the first study, subjective effects produced by the drugs generally covaried with the discriminative stimulus effects. For example, *d*-amphetamine and methylphenidate, which substituted for Drug A, produced dose-related increases in ratings of drug liking and scores on the MBG, BG, and A scales of the Addiction Research Center Inventory, whereas diazepam did not. However, in the second study, *d*-amphetamine and hydromorphone dose-dependently increased reports of drug liking and scores on the MBG and A scales, although hydromorphone failed to substitute for the Drug A stimulus. These data indicate that drug discrimination procedures are useful for studying the discriminative stimulus effects of drugs in humans and that the subjective and discriminative stimulus effects of drugs do not necessarily parallel one another.

CAFFEINE AS A DISCRIMINATIVE STIMULUS IN HUMANS. Alison H. Oliveto, Warren K. Bickel, John R. Hughes, Stephen T. Higgins and Pam Shea. University of Vermont, Burlington, VT.

Although caffeine is the most widely used psychoactive compound in the world, its behavioral effects have not been investigated extensively. The present study examined the ability of caffeine to serve as a discriminative stimulus in humans. Briefly, 8 healthy male and female subjects (aged 18–45 years) having some prior experience with caffeine were employed. During the experiment, subjects were required to abstain from alcohol and caffeine for 12 hr and solid food for 4 hr prior to each session. The following procedure was used to determine whether subjects could learn to discriminate between 320 mg/70 kg of caffeine (e.g., drug A) and placebo (drug B): During the first 4 daily sessions (Training Phase), drug A and drug B were administered orally in capsule form 90 min prior to the session on alternate days and subjects were informed of the drug label at the time of drug administration. Over the next 20 sessions (Test of Acquisition Phase), drug A and drug B were administered in a randomized-block fashion, such that each drug was administered twice every four days, and subjects were informed of the drug label after the session terminated. Discrimination was assessed by measuring: 1) percentage of points accumulated using the appropriate drug label manipulandum under a concurrent fixed-interval 1-sec schedule; 2) identification of the appropriate drug label under a discrete choice procedure; and 3) number of points out of 100 placed on the appropriate drug label. Thus far, 2 of 3 subjects learned the discrimination within 20 sessions. A caffeine stimulus generalization curve was obtained, such that caffeine at doses of 56 and 100 mg/70 kg generally produced placebo-appropriate responding, whereas caffeine at doses of 180, 240 and 320 mg/70 kg generally produced caffeine-appropriate responding. Triazolam (0.10–0.56 mg/70 kg) produced predominantly placebo-appropriate responding. These preliminary results indicate that the caffeine stimulus is discriminable and has pharmacological specificity.

DISCRIMINATIVE STIMULUS PROPERTIES OF DIAZEPAM IN HUMANS. Chris E. Johanson. Uniformed Services University of the Health Sciences, Bethesda, MD.

Nineteen normal human volunteers participated in an experiment designed to investigate the discriminative stimulus properties of 10 mg diazepam. On each experimental session, participants filled out a series of mood questionnaires, ingested a capsule, and then were free to leave, i.e., they returned to their normal daily activities. At 1, 3 and 6 hr after leaving, subjects filled out additional sets of the mood questionnaires. During phase 1, the participants were trained to discriminate between 10 mg diazepam and placebo by identifying the capsule to the participant prior to ingestion using letter codes (A or B). Each subject received two sessions with diazepam and two with placebo under single-blind conditions. During phase 2, subjects were not told which capsule they received prior to ingestion and were asked to telephone the experimenter 6 hr after ingestion to report their discrimination