

doses above 0.3 mg/kg and tended to decrease heart rate. In both humans and monkeys, there were doses of cocaine which maintained self-administration and which had negligible effects on cardiovascular function. Nevertheless, significant cardiovascular effects were seen within the range of doses which maintained self-administration.

THE EFFECTS OF CHRONIC COCAINE ADMINISTRATION ON BRAIN NEUROTRANSMITTER RECEPTORS. Nick E. Goeders. Louisiana State University School of Medicine, Shreveport, LA.

Experiments were designed to investigate the neurobiological consequences of chronic cocaine administration using a multidisciplinary approach involving behavioral pharmacology, neurochemistry and neuroanatomy. The marriage of these traditionally independent fields of study results in a better understanding of the neuropathology of chronic cocaine intoxication. Twenty-four rats were trained to respond on a variable-interval 90 sec (VI90) schedule of food reinforcement, and dose-response curves for acute cocaine administration were determined in each animal. The rats were then randomly divided into four treatment conditions: (1) cocaine before; (2) cocaine after; (3) saline before; or (4) saline after. During the next six weeks, the animals received daily injections of cocaine (10 mg/kg, IP) or saline (1 ml/kg, IP) five days per week immediately before or after the behavioral session. Cocaine dose-response curves were again determined in each rat over an additional six weeks on Tuesdays and Fridays while the animals remained on their chronic dosing schedules. Chronic injections of saline both before and after the behavioral session or cocaine after the session did not alter the effects of cocaine on rates of responding on the VI90 schedule of food reinforcement. However, the effects of cocaine on response rates were significantly increased in all six animals that received chronic injections of the drug immediately prior to the behavioral session. Light microscopic quantitative autoradiography was used to visualize various receptor binding sites in serial sections through the brain of each rat for the precise localization of discrete changes in receptor number and densities that may have resulted from the different treatment conditions. The contingencies described in these experiments permit direct comparisons between animals that exhibit disparate behavioral effects following an identical number of chronic cocaine injections and may, therefore, identify specific brain loci and receptor systems sensitive to the complex behavioral effects of cocaine. (Supported in part by USPHS Grant DA 04293.)

POSTER SESSION

Drugs and Behavior

Co-Chairs: *Leonard L. Howell*, Yerkes Regional Primate Research Center, Emory University, Atlanta, GA; and *Charles P. France*, University of Michigan School of Medicine, Ann Arbor, MI

DRINKING RESTRAINT AND DIFFERENTIAL RESPONSIVENESS TO BEER TASTE CUES. Lillian S. Bensley. University of Washington, Seattle, WA.

This study examined the possible role of heightened external responsiveness in restrained drinking, a style of social drinking control which is characterized by considerable ef-

fortful self-restraint, alternating with overconsumption. Fifty-nine social drinkers, classified on the basis of a pretest as restrained or unrestrained and as heavy or light drinkers, were given access to three brands of beer which had been previously identified as that individual's most preferred, least preferred and moderately preferred beer. The most preferred beer yielded the only difference, and restrained drinkers drank significantly more than unrestrained drinkers, providing evidence that heightened responsiveness to external cues (taste) may be related to a problematic style of social drinking control.

THE EFFECT OF SUCCESSFUL DRINKING RESTRAINT ON SUBSEQUENT ALCOHOL CONSUMPTION. Lillian S. Bensley. University of Washington, Seattle, WA.

A period of successful self-restraint of drinking behavior may predispose some individuals to subsequent overconsumption. Habitually light and heavy drinkers were randomly assigned to a two-week period of either abstinence from all alcoholic beverages or normal drinking. Following abstinence, heavy-drinking males (for whom, presumably, achieving abstinence required considerable effortful restraint) showed heightened alcohol consumption compared to otherwise similar individuals who were assigned to normal drinking. There was no such effect among light drinkers. The results suggest that a period of circumstantially initiated drinking reduction may lead to heightened subsequent alcohol consumption, providing evidence for a restraint model of problematic drinking control.

COGNITIVE FUNCTIONING AND THE INHERITED RISK FOR ALCOHOLISM. Jordan B. Peterson, Robert O. Pihl and Peter R. Finn. McGill University, Montreal, Quebec, Canada.

A battery of neuropsychological tests designed to assess cognitive impairment was administered to 11 sober and 11 alcohol-intoxicated multigenerational sons of alcoholics and to 2 groups of 11 demographically-matched controls. Analysis of the results of the test battery demonstrated that multigenerational sons of alcoholics manifested deficits in those cognitive functions associated with the prefrontal cortex. Eighteen of the high-risk subjects had previously participated in a study that demonstrated their cardiac hyperreactivity to stimulation. Post hoc analysis of the combined results of these two studies indicated a highly significant relationship between cognitive impairment and cardiac hyperactivity. The data have theoretical and practical implications for inheritance of risk for alcoholism.

THE RELATIONSHIP BETWEEN ADULT ALCOHOL CONSUMPTION AND DEVIANT CHILD BEHAVIOR. William E. Pelham, Jr. Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine, Pittsburgh, PA; Alan R. Lang. Florida State University, Tallahassee, FL; Debra A. Murphy. Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine; and Beverly Atkeson. Florida State University, Tallahassee, FL.

Ninety-six adult subjects who were parents of attention deficit disorder/conduct disorder (ADD/CD) children were recruited to participate in a study in which the effects of