criteria for rehabilitation and followed six years later by chart review and interview. Results were based on 235 chart reviews and 102 interviews. Detoxification fear was found to persist. Those with detoxification fear were found to spend significantly longer periods on methadone maintenance, have fewer detoxification attempts, fewer successful detoxification attempts and to meet the rehabilitation criterion for no use of illicit drugs. Implications of these findings for methadone maintenance treatment are discussed.

**POSTER SESSION**

Chair: *David M. Penetar,* Walter Reed Army Institute of Research, Washington, DC.

A PSYCHOPHYSICAL TASK TO QUANTIFY SMOKING CESSATION-INDUCED IRRITABILITY. Jane B. Acri and Neil E. Grunberg. Uniformed Services University of the Health Sciences, Bethesda, MD.

A psychophysical rating scale using magnitude estimation was developed as a tool to quantify irritability as one index of drug withdrawal. The scale measures irritability by using sounds as a probe for reactivity. Three experiments are described in which target and reference stimuli are selected, tested for reliability and presented to cigarette smokers abstaining from smoking, cigarette smokers who are not abstaining, and nonsmokers. The task was found to have test retest reliability, cross-validity with other withdrawal scales, and significantly differentiated abstaining smokers from both nonsmokers and smokers allowed to smoke. The technique may be of value in the study of withdrawal from nicotine and other drugs of abuse.

LIKERT OR NOT: TWO ANSWER FORMATS FOR THE ALCOHOL EXPECTANCY QUESTIONNAIRE. Toby A. Ansfield and Vincent J. Adesso. University of Wisconsin-Milwaukee; Bruce A. Christiansen. Blue Cross and Blue Shield of Wisconsin, Milwaukee, WI.

The present study investigated the reliability and relative predictive accuracy of two answer formats (true/false and Likert) of the Alcohol Expectancy Questionnaire (AEQ). Eighty college students completed the questionnaire in the true/false answer format; three weeks later a different experimenter administered the questionnaire with a five-choice Likert format along with the Cahalan Drinking Practices Questionnaire. Preliminary analyses indicate that the Likert format has higher internal consistency on all subscales, and is expected to have higher relative utility for predicting scores on the Cahalan.

ACUTE PHYSICAL DEPENDENCE IN OPIATE-EXPERIENCED AND OPIATE-NAIVE MALES. Julian L. Azorlosa and Maxine L. Stitzer. The Johns Hopkins University School of Medicine, Baltimore, MD.

Acute physical dependence to morphine occurs after a single dose in postaddict males. In the present study, ten opiate-experienced males and ten opiate-naive males received a single dose of morphine (15 mg/70 kg, IM) followed 4.3 hours later by naloxone (30 mg/70 kg, IM). Ten additional opiate-experienced males and ten opiate-naive males received two morphine injections spaced 24 hours apart, with the second injection followed 4.3 hours later by naloxone. Naloxone produced significant elevations in both subjective and observer-rated withdrawal symptoms which were much more pronounced after two morphine injections. This study demonstrated acute physical dependence in opiate-naive subjects after a single dose of morphine and a dramatic increase in withdrawal with two doses. There were few differences between opiate-experienced and opiate-naive subjects.

ALCOHOL EXPECTANCY, BEVERAGE PREFERENCES AND CONSUMPTION PATTERNS AMONG COLLEGE STUDENTS. Bertrand D. Berger and Vincent J. Adesso. University of Wisconsin-Milwaukee, Milwaukee, WI.

Little work has investigated the relation between alcohol-related expectancies and specific alcohol consumption measures. Using multiple regression equations, the Alcohol Expectancy Questionnaire (AEQ) was used to predict quantity-frequency-variability, frequency, and quantity of beer, liquor, wine and overall alcohol consumption. Results revealed that expectancies of increased social and physical pleasure and tension reduction significantly predicted overall alcohol consumption across all beverages. Expectancies of increased power predicted frequency of liquor consumption, expectancies of increased assertiveness predicted quantity of beer consumed, and expectancies of increased tension reduction were not predictors of frequency and quantity of wine consumption.

DISCRIMINATIVE LEARNING WITH A COMPOUND DRUG AND EXTEROCEPTIVE STIMULUS. D. J. Bobelis and R. L. Balster. Departments of Psychology and Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA.

A two-lever operant procedure was utilized to examine the relative salience of an external versus a drug discriminative stimulus in rats trained to discriminate compound (internal + external) stimuli. Injections of phencyclidine (1.25 mg/kg IP) or saline served as the interoceptive stimuli; illumination of cue lamps above the correct lever served as the external stimuli. Despite training with lights illuminated over the correct lever, some subjects evidenced no stimulus control by the lights and responded during test sessions predominantly on the lever associated with PCP or saline. In other subjects, drug stimulus control was markedly affected by the conditions of the exteroceptive stimuli. These results support other studies showing the strength of interoceptive drug stimuli, but indicate that their salience can be altered by exteroceptive stimulus events.

ASSESSMENT OF CAFFEINE AND NICOTINE USE IN COCAINE-DEPENDENT INDIVIDUALS. Alan J. Budney, Stephen T. Higgins, John R. Hughes and Warren K. Bickel. University of Vermont, Burlington, VT.

Caffeine and nicotine use was examined in 50 persons seeking outpatient treatment for cocaine dependence. Seventy percent of the males and 56% of the females were regular caffeine users and reported consuming an average of 4.6 caffeinated beverages per day. This prevalence rate and consumption estimate do not appear to differ from those observed in the general population. Preliminary data collected during treatment suggest that caffeine consumption does not systematically covary with cocaine use. Seventy-four percent of the males and 88% of the females were regular cigarette smokers and reported using an average of 1.1 packs per day. This prevalence rate is higher than the general population and similar to smoking rates observed in the alcohol-

dependent population. (Supported by R18DA06113.)

ADHD AND UADD: DIFFERENTIAL TREATMENT EFFECTS OF STIMULANT MEDICATION. Richard A. Campbell. University of Texas Southwestern Medical Center, Dallas, TX; Sebastian Striefel. Utah State University, Logan, UT; Dennis Odell. Developmental Center for Handicapped Persons, Logan, UT; Phyllis Cole. Utah State University, Logan, UT; Sunita Steward. University of Texas Southwestern Medical Center, Dallas, TX.

This study investigates the treatment effects of methylphenidate in Attention Deficit-Hyperactivity Disorder (ADHD) and Undifferentiated Attention Deficit Disorder (UADD) using a pretest-posttest experimental design. Twelve children diagnosed as ADHD and 12 children diagnosed as UADD were compared on measures of self-reported depression and self-esteem and parent and teacher ratings of problem behavior before and after a 3-month trial of methylphenidate. Significant improvement was found in self-reported depression and self-esteem and inattention/hyperactivity in both groups following a trial of stimulant medication. Significant improvement was found in anxiety, depression, and uncommunicative behavior in the UADD group but not in the ADHD group. Significant improvement was found in aggressive problem behavior in the UADD group. Stimulant medication does not reduce the aggressive behavior of ADHD children, suggesting a multimodal treatment approach for ADHD children with aggressive problem behavior.

SEVERITY OF DRUG WITHDRAWAL EFFECTS IS ALTERED BY BEHAVIORAL ECONOMIC VARIABLES. Marilyn E. Carroll. University of Minnesota, Minneapolis, MN.

Phencyclidine (PCP) withdrawal was studied under several different economic conditions. Withdrawal effects were measured by disruptions in food-reinforced responding. In the first experiment, the cost of food or fixed-ratio (FR) value was varied over a wide range. The severity of PCP withdrawal disruptions increased as the cost of food increased. In the second experiment the availability of food was altered such that the monkeys had to earn all their food (closed economy) or the earned food was supplemented by the experimenter (open economy). When earned food was supplemented, the same amount of food was earned, but the effects of PCP withdrawal on the amount of earned food was markedly greater than when only earned food was available. In the third series of experiments the combined effect of PCP and caffeine withdrawal and PCP and ethanol withdrawal was compared to that of each drug alone. Results indicated that the withdrawal of drug combinations was more severe than that of either drug alone.

COCAINE DIFFERENTIALLY AFFECTS ENRICHED AND ISOLATED RATS' ATTENTIONAL PERFORMANCE. J. Michael Chase and Stephen C. Fowler. University of Mississippi, University, MS.

At 220 days of age rats reared/housed in an enriched condition (EC) or isolated condition (IC) were divided into 3 EC and 3 identical IC chronic cocaine dosing groups (0.0, 2.5, or 7.5 mg/kg, IP, daily, 10 min presession). These six groups were trained to perform a Sustained Attention Task, receiving daily injections of cocaine for 53 sessions until the task was learned. Doses of cocaine (0.0, 0.63, 1.25, 2.5, 5.0, 10.0, and 20.0 mg/kg, IP, 10 min presession) were tested for their ability to enhance performance. Rate of head insertion was dose-dependently disrupted, while time on task and reinforcements received showed enchancement at low doses. Effects may be due to rate-dependency and deficiency compensation. (Supported by DA05310.)

DEFEATED HUMANS SHOW ANALGESIA: ENDOGENOUS OPIOIDS IMPLICATED. Desmond J. Coen. Workers Compensation Board of British Columbia, Vancouver, BC.

The effects of victory and defeat in human competition upon cutaneous sensitivity were studied. Defeat increased sensation and pain perception thresholds to electrical stimulation, while victory decreased pain perception threshold. This pattern of results was seen in highly competitive karate, wrestling, and chess, but not in recreational sports where the intensity of competition was low. Social defeat analgesia and social dominance hyperalgesia were prevented in wrestlers by administration of 50 mg of the opiate antagonist naltrexone. These findings suggest that winning or losing can respectively sensitize or inhibit pain control systems through opioid activity.

TIME COURSE OF BUCCAL NICOTINE ABSORPTION. Caroline Cohen, Aleksandras Radzius, Eric Simmons and Jack E. Henningfield. Addiction Research Center, National Institute on Drug Abuse, Baltimore, MD.

Nicotine polacrilex gum can be a useful adjunct in treating tobacco dependence if adequate dosing levels are achieved. Factors such as salivary pH and chew rate affect nicotine absorption from the polacrilex. In addition, an experiment with smokeless tobacco suggested that the length of time saliva remains in the mouth is a determinant of nicotine absorption. The present study was conducted to determine effect of varying the time nicotine from polacrilex is held in the mouth. Rather than have the subjects swallow their saliva at various intervals we instructed them to spit at intervals of 6, 12, 24, 48, or 96 seconds while chewing 4 mg nicotine polacrilex. A preliminary analysis of data from the first 3 subjects indicates that at all spitting rates, a significant increase in serum nicotine is achieved when measured 20 and 35 minutes after start of chewing. At 20 minutes after start of chewing, there appears to be an orderly increase in serum nicotine from pregum levels at 6-, 12- and 24-second spitting rates and a leveling off after the 24-second spitting rate. At 35 minutes after start of chewing, there is little difference in change of serum nicotine levels from pregum levels across spitting rates. Our current findings suggest that a patient should keep saliva resulting from chewing nicotine polacrilex gum in the mouth for at least 12 to 24 seconds to achieve maximal buccal nicotine absorption.

SECOBARBITAL EFFECTS ON HUMANS' LEVER PRESSING SUPPRESSED BY RESPONSE CONTINGENT POINT LOSS. Mark Egli and Don R. Cherek. University of Texas Health Sciences Center, Houston, TX.

Two adult male human volunteers lever pressed for points (worth 10 cents each) under a variable interval schedule. Responding was suppressed by response contingent point subtraction in one component, and by a tandem interresponse time 2 second condition in the other. Secobarbital (50, 100, and 200 mg/70 kg), administered 20 minutes prior to the first component, increased lever press rates from low placebo baseline rates and