

The present study investigates the interactive effects of smoked marijuana administration and task performance on cardiovascular responsivity. Nine healthy male marijuana users (ages 23–31) smoked either a placebo or active marijuana cigarette during 5 daily testing sessions. Ten minutes after drug administration, 5 subjects (Group I) performed a 10 minute modified repeated acquisition task and 4 subjects (Group II) rested quietly. Mean arterial blood pressure (MAP) was sampled at 2 minute intervals and heart rate was recorded continuously. Although both marijuana and task performance administered independently produced elevated MAP, the combination of drug and task produced MAP increases of consistently greater magnitude while sustaining marijuana induced heart rate elevations.

**CONTRAST ADDICTION THEORY: RIDING THE ESCALATOR TO PARADISE LOST.** John M. Bercz. Andrews University.

Contrast Addiction Theory (CAT) is an experiential-perceptual theory in which *contrast* is a primary construct. Users seek to enhance contrast between existing body concentrations of a drug and self-dispensed concentrations. The users attempt to maintain the potency of the original high is constantly eroded by the organism's adaptational processes, necessitating ever higher levels of drug ingestion in order to experience a "buzz." Like a dog chasing it's tail, this turns out to be futile, since increasing dispensed concentrations simultaneously increases tissue drug concentrations—reducing instead of enhancing contrast. A "marriage" is proposed between CAT and TSD (Theory of Signal Detection). The well-developed mathematical technology of TSD and the integrative constructs of CAT provide the basis for innovative research in addictive disorders.

**COMPLIANCE FOR PHARMACOTHERAPY AND PSYCHOTHERAPY IN ADD CHILDREN.** Ronald T. Brown. Dept. of Psychiatry, Emory University School of Medicine; Kathi A. Borden. Roosevelt University; and Philip Jenkins. University of Houston.

Patient adherence to treatment protocols has only recently been recognized as an important consideration in pediatric psychopharmacology research. The present study examined demographic, child, and family characteristics of patients who fully adhered, partially adhered, or prematurely discontinued treatment in one such project studying the effects of methylphenidate and adjunct treatment on Attention Deficit Disorder (ADD) children. Approximately one-fourth of the participants adhered to the treatment protocol. The preponderance of nonadherence is discussed as a possible explanation for the rather dismal findings of long-term treatment studies with ADD children. Several characteristics of adherents and nonadherents were reported.

**EFFECTS OF PIMOZIDE, CLOZAPINE AND AMPHETAMINE ON MULTIPLE RANDOM INTERVAL PERFORMANCE.** Joseph H. Porter and Heidi B. Freese. Virginia Commonwealth University.

Fifteen rats at 80% body weight were tested on a four

component MULTIPLE RANDOM INTERVAL food reinforcement schedule with mean intervals of 10, 40, 80 and 160-sec. Both pimozide and clozapine produced a significant dose-dependent decrease in barpressing, while amphetamine had no effect. Motor capacity (as measured by response duration, Matching Equation parameter  $k$ , and an independent measure of photocell activity) was decreased by pimozide and clozapine. Amphetamine produced an increase in photocell activity. Reward performance (as measured by the parameter,  $R_e$ ) was not significantly changed by any of these drugs. Possible motor and reward effects of neuroleptic drugs on operant performance are discussed.

**Paper Session: Maxine L. Stitzer, chair**  
Tuesday, August 26, 1:00–1:50 p.m.  
Monroe East, Washington Hilton

**SMOKING SATISFACTION: SENSORY AND PHARMACOLOGIC COMPONENTS.** Jed E. Rose and Carol Hickman. University of California, Los Angeles.

The sensory and pharmacologic actions of cigarette smoke were dissociated in order to compare their relative importance in mediating smoking satisfaction. Two conditions of smoke inhalation were compared: (1) deep inhalations of large volumes of extremely dilute smoke (33 cc puff of smoke in 2 liters of air). These puffs delivered a pharmacologically effective dose of nicotine, but were intended to have little sensory impact; (2) shallow inhalations of concentrated smoke (60 cc of air followed each 35 cc puff of smoke). These puffs delivered little nicotine, as only a small fraction of smoke particles are absorbed in the upper airways. The dilute smoke inhalations produced significant physiological effects (increased heart rate and expired air carbon monoxide concentrations); however, puffs were rated weak and did not reduce craving for cigarettes. In contrast, shallow inhalations of smoke were rated strong and satisfied craving for cigarettes, despite the absence of nicotine effects. Under conditions of mild cigarette deprivation (30 min), the sensory reinforcing effects of cigarette smoke overshadowed the pharmacologic reinforcing effects of nicotine.

**EFFECTS OF MECAMYLAMINE ON SUBSEQUENT SMOKING AND PLASMA NICOTINE LEVELS.** Cynthia S. Pomerleau, Ovide F. Pomerleau and Mark J. Majchrzak. Dept. of Psychiatry, University of Michigan School of Medicine; Jean-Jacques Hajjar, M.D. and William R. Shanahan, M.D. Dept. of Internal Medicine, University of Connecticut.

Mecamylamine, a centrally active nicotinic antagonist, has been shown to block in a dose-related fashion certain behavioral and physiological responses to nicotine. Acute administration, however, has also been shown to increase amount of smoking, a phenomenon interpreted as compensatory behavior designed to overcome mecamylamine's blocking effects. We now report significantly greater increases in plasma nicotine following smoking of high-nicotine (2.87 mg) research cigarettes in subjects when pretreated with mecamylamine than when pretreated with placebo, even in the absence of significant differences in puff