PAPER SESSION I
Behavioral Pharmacology: Laboratory Studies.
Chair: *Linda A. Parker*, Wilfrid Laurier University, Waterloo, Ontario, Canada

THC-INDUCED CONDITIONED PLACE AVERSIONS IN SPRAGUE-DAWLEY AND LEWIS RATS. Linda A. Parker and Todd Gilles. Wilfrid Laurier University, Waterloo, Ontario.

Delta-9-tetrahydrocannabinol (THC) has been reported to be relatively ineffective in promoting drug self-administration, but has been demonstrated to reduce the threshold for brain stimulation reward in Lewis strain rats. The following experiment assessed the ability of THC (.2, .4, .75, 1.5 mg/kg, ip) to produce place conditioning. The results revealed that THC produced an aversion to a place with which it was paired on 3 occasions in both strains, although the Lewis strain appeared to be more sensitive to the aversive properties of THC than the Sprague–Dawley strain.

THE ATYPICAL ANTIPSYCHOTIC CLOZAPINE SLOWS LICK RHYTHM MORE THAN HALOPERIDOL. Stephen C. Fowler and Shyamal Das. University of Mississippi, University, MS.

Low doses of clozapine and haloperidol, antipsychotics with low and high extrapyramidal side effect liabilities, respectively, were compared in rats trained to lick water from a force-sensing disk. Number of licks, peak force of individual tongue contacts, and force-time waveforms were recorded. The latter were subjected to Fourier analysis as a means of quantifying the rhythm of licking. Both clozapine and haloperidol dose-dependently reduced number of licks and peak force of tongue protrusions, but only clozapine substantially slowed the rhythm of the tongue oscillations. These differences in effects on tongue dynamics were discussed in relation to clozapine's effects on a broad spectrum of neurotransmitter systems with special emphasis on the neurotransmitters that influence the hypoglossal nucleus. Supported by MH43429.

NALOXONE AND OPERANT RESPONDING FOR FOOD: EFFECTS OF DEPRIVATION LEVEL. Jeffrey M. Rudski,* Charles J. Billington,† and Allen S. Levine.* *University of Minnesota, Minneapolis, MN, †VAMC, Minneapolis, MN.

Naloxone does not decrease operant responding in chronically deprived rats. We examined the effect of naloxone (0, 0.1, 0.3, 1.0, 3.0, 10.0 mg/kg) on FR 80 (1st) - FR 3 (subsequent pellets) or PR 2 responding in chronically deprived (90%), restricted access (22 g) and free feeding rats. Naloxone decreased responding under both operant schedules more effectively and at lower doses when rats were less deprived (free-access > restricted access > chronic deprivation). Thus, naloxone's effect on operant responding is dependent upon deprivation state.

COGNITIVE EFFICIENCY AND CONTROL UNDER THE INFLUENCE OF ALCOHOL. William M. Lapp, R. Lorraine Collins, and William H. Zywiak. Research Institute on Addictions, Buffalo, NY.

The theory of alcohol myopia assumes that both the efficiency and control of cognitive processing decrease as a function of the pharmacological dose of alcohol, and are not affected by the expected dose. Unfortunately, this claim has been difficult to test due to procedural and data analytic limitations of the original Balanced Placebo Design (BPD). In the present study, an extended version of the BPD was used to study the expected and pharmacological effects of alcohol within the range thought to be relevant for testing the theory of alcohol myopia. Support for the theory of alcohol myopia was observed with respect to both the efficiency and control of cognitive processing. Some support was also observed for Expectancy theory, but it was limited to the efficiency of cognitive processing. The results suggest that the theory of alcohol myopia rests on two very sound theoretical assumptions about how alcohol affects cognitive processing, but could be improved by incorporating aspects of Expectancy theory.

NEW INSTRUMENTS TO ASSESS HUMAN DRUG CRAVING. Edward G. Singleton,* Stephen T. Tiffany,† Jack E. Henningfield,* Charles A. Haertzen,* Laurie Fields.* *NIH NIDA Addiction Research Center, Baltimore, MD, †Purdue University, West Lafayette, IN.

No consensus has been reached regarding the meaning of *drug craving*. Significant discoveries have been hampered by not having a reliable instrument that has been scientifically evaluated to use in the measurement and operational definition of this concept. New instruments were developed to assess craving for cocaine, heroin, and alcohol. Results indicate that drug craving is multidimensional. For each of the three drug types it consisted of an amalgam of five theoretical dimensions of drug use: 1) irresistible urges and desires, 2) intent to use, 3) relief from negative outcome, 4) anticipation of positive outcomes, and 5) lack of control over use. The patterns found here would not have been identified by traditional craving measures. Researchers may begin to address the complex issues that have limited our understanding of what constitutes craving and how it operates, as well as what physiological and psychological mechanisms account for its existence.

PAPER SESSION II
Human Behavioral Pharmacology: Clinical Issues.
Chair: *Timothy A. Roehrs*, Henry Ford Hospital Sleep Disorders and Research Center, Detroit, MI.

TYPE I AND TYPE II ALCOHOLISM IN A TREATMENT SAMPLE. Kevin L. Elliott,* William T. Bailey,† and William G. Kirk.† *University of Illinois, Urbana, IL, †Eastern Illinois University, Charleston, IL.

A promising approach to the identification of distinct alcoholic types is the Type I/Type II model of alcoholism (Cloninger, Sigvardsson, von Knorring & Bohman, 1988). The present study examined Type I and Type II characteristics in a treatment population. Subjects (n = 108) were differentiated by sex and categorized into types by age of onset. Significant differences were found between sexes and between types on the basis of social consequences and family history. The typology was supported to some degree; but, unexpectedly, there was evidence of Type II alcoholism in females. It is possible that the treatment sample represented a population that has been inadequately studied in the past.

THE ROLE OF SSRIs IN THE TREATMENT OF COCAINE DEPENDENCE. Alan S. Wikler, New York University, New York, NY, New York VA Medical Center, New York, NY.

While there is considerable evidence suggesting that the highly addicting effects of cocaine are due to dopamine reuptake and binding in reward-mediating systems in the brain, psychopharmacological treatment approaches with dopaminergic agents have largely failed to be effective. Recent studies suggest that cocaine binding is dose-dependent, with higher doses binding selectively to cortical sites. Competition studies with serotonergic agents indicate that displacement of cocaine is highly correlated with 5-HT inhibition values at these sites. Preliminary studies suggest that the selective serotonin reuptake inhibitors (SSRIs) fluoxetine and sertraline may be effective in treating cocaine. A pilot study of the efficacy of clomipramine and paroxetine is described.

ENHANCED METHADONE MAINTENANCE TO REDUCE HIV RISK AMONG HEROIN ADDICTS. Christine E. Grella and M. Douglas Anglin. UCLA Drug Abuse Research Center, Los Angeles, CA.

This paper will present the results of an evaluation of a research demonstration project funded by NIDA with the goal of reducing high-risk behavior for HIV infection/transmission among heroin addicts. Subjects (n = 500) were randomly assigned to receive either enhanced or standard methadone treatment. Data will be presented on drug use and HIV-risk behavior at follow-up 18 months after admission. The presentation will conclude with an analysis of the effectiveness of an enhanced methadone treatment protocol and the role of methadone treatment in reducing high-risk HIV behaviors among injecting heroin addicts.

BENZODIAZEPINE-HYPNOTIC PREFERENCE: DAYTIME VERSUS NIGHTTIME. Timothy A. Roehrs, Bonita M. Pedrosi, Frank J. Zorick, and Thomas Roth. Henry Ford Hospital Sleep Disorders and Research Center, Detroit, MI.

Nineteen healthy adults, aged 21–45 yrs, with insomnia (n = 9) or normal sleep (n = 10) were studied to determine whether the benzodiazepine-hypnotic preferences of insomniacs would generalize to the daytime. All underwent a night and a day phase, which each consisted of 2 sampling nights (or days) and 5 forced-choice nights (or days) with color-coded placebo or triazolam pills administered (or chosen) at 2300 or 0900 h. Triazolam was preferred to placebo by both groups at night, but insomniacs preferred triazolam during the day, while normals did not. Some subjects showed an exclusive triazolam preference and they rated themselves as more fatigued on the POMS, while being physiologically hyperalert, compared to those subjects with an exclusive placebo preference.

TREATMENT REGIMEN AND SUBSEQUENT SELF-ADMINISTRATION OF BENZODIAZEPINE-HYPNOTICS. Bonita M. Pedrosi, Timothy A. Roehrs, Leon D. Rosenthal, and Thomas Roth. Henry Ford Hospital Sleep Disorders and Research Center, Detroit, MI.

Twenty-four healthy adults, aged 21–45 yrs, with insomnia (n = 9) or normal sleep (n = 15) were randomly assigned to a hs, prn, or intermittent (every third night) treatment regimen to assess the role of that regimen in subsequent nightly self-administration of benzodiazepine-hypnotics. Each, as an outpatient, underwent 1 sampling, 10 treatment, and 7 choice nights, once with triazolam (0.25 mg) and once with placebo, randomized in order. The number of triazolam and placebo choices did not differ, but there was a higher number of pill choices among the insomniacs. The intermittent regimen lead to the fewest subsequent pill choices.

POSTER SESSION

Psychopharmacology and Substance Abuse.
Chair: *Marilyn E. Carroll,* University of Minnesota, Minneapolis, MN.

PRENATAL COCAINE AFFECTS STEREOTYPY FOLLOWING ACUTE SKF-38393 IN WEANLING RATS. Alissa B. Gilde* and Diana L. Dow-Edwards.† *Hofstra University, Hempstead, NY, †SUNY Health Science Center at Brooklyn, Brooklyn, NY.

This study examined the effects of prenatal cocaine exposure on stereotypic behaviors following SKF-38393 challenge in weanling rats. Pregnant rats received 30 or 60 mg/kg/day cocaine HCl orally during gestational days 8–22. A vehicle-intubated control group pair-fed to rats receiving the higher dose of cocaine was also maintained. At 21–22 days of age, pups received 0, 1.0, 10.0, or 30.0 mg/kg of the D_1 agonist SKF-38393 sc followed immediately by 60 minutes of activity monitoring. Results indicated SKF-38393 caused dose-dependent increases in head grooming. C60 female offspring head-groomed significantly less than C30 and pair-fed control female offspring. Although no effect of prenatal treatment was found for sniffing, body grooming, or pellet-directed behavior, dose-dependent differences were observed.

RETENTION AND EXTINCTION OF CONTEXT-SPECIFIC MORPHINE WITHDRAWAL. Julian L. Azorlosa and Cheryl Deffner-Rappold. Southeastern Louisiana University, Hammond, LA.

In Exp. 1, four groups of rats were given 11 injections of morphine either paired or unpaired with distinctive environmental cues (DE). One paired and one unpaired group received a low dose (10 mg/kg) and the other two received a high dose (75 mg/kg). A fifth group received saline. Twenty-four hours after the final session, all groups were given a saline injection in the DE and observed for withdrawal. Context-specific rearing was observed in both dose conditions and wet dog shakes were contextually controlled in the high dose group. Context-specific rearing was retained during a 10 day period of morphine abstinence. In Experiment 2, four groups of rats were given 11 injections of morphine in the DE followed by either extinction (exposure to the DE, with or without a saline injection) or rest (remain in home cage with or without injection). The results show that exposure to the DE resulted in substantially less rearing compared to groups which remained in the home cage or the saline control. Injection cues had no effect on context-specific withdrawal.