NEUROPSYCHOLOGICAL, INTELLECTUAL AND PERSONALITY FUNCTIONING IN PCP ABUSING YOUNG ADULTS. Roger K. Light,* Gabriel Frommer,* M. David Lewis and James Bennett. *Indiana University and Coldwater Canyon Hospital, CA.

The present project was designed to assess neuropsychological and personality functioning in two separate samples of youthful drug abusers (N=116 and 52). One samples was comprised of patients recently hospitalized for substance abuse and was included to allow examination of the acute effects of Phencyclidine (PCP). The second sample was comprised of abusers who had either never been hospitalized, discharged from hospitalization or were soon to be discharged from a substance abuse facility. Cognitive and personality assessments were performed on the first sample and neuropsychological testing was performed on the second. Pre-drug use intellectual/achievement data were collected for a subsample of the study 2 subjects. The reliability with which drug abusers report the drugs of use was also examined.

COGNITIVE FACTORS IN SUBSTANCE ABUSE: THE CASE FOR EARLY LEARNING. Robert B. Noll, Robert A. Zucker, Constance Weil and Gregory Greenburg. Michigan State University, MI.

Little is known concerning early learning about drugs and their uses. Current prevention efforts focus upon the adolescent's personal experiences and peer group influences as significant sources of knowledge about drugs. Recent evidence on children's knowledge of alcoholic beverages suggests that attitudes about specific drugs develop much earlier than adolescence. The present study compares alcohol related cognitions of preschool children who live in alcoholic families, to those of the same aged community control peers. The children with alcoholic parents demonstrated quicker recognition of alcoholic beverages and more frequently expected adults to consume alcoholic beverages. Discussion focuses on needed revisions in current prevention programs and theories of substance abuse development.

SAY IT STRAIGHT: SUBSTANCE ABUSE PREVENTION TRAINING FOR ADOLESCENTS. Paula Englander-Golden, Joan Elconin, Kevin Miller and Sally Parrish. University of Oklahoma, OK.

Sixth, seventh and eight graders created and role played situations in which they wanted to say "no" to an offer of alcohol/drugs or to talk to a friend who was "using." Satir's body sculpting was used to illustrate communication styles, i.e., placating, blaming, irrelevant, super-reasonable, assertive/leveling and to maximize the probability of elicitng feelings. Youngsters exchanged information about their feelings as they interacted within role plays and practiced behaviors they found most effective. All experimental grades, but no controls, moved significantly toward assertiveness/leveling. Since training began 1½ years ago, not a single trained youngster has been identified as a new user as defined by alcohol/drug related school suspensions.

Poster Session: Comparative Physiological and Psychopharmacological Studies (Elkan Gamzu, chair)
Saturday, August 25, 9:00–10:50 a.m.—Sheraton Centre

AUTOMATED MONITORING OF PREFERRED AMBIENT TEMPERATURE AND BODY CORE TEMPERATURE. Paul R. Margues and Robert L. Spencer. University of Arizona, AZ.

These studies, made possible with a computer controlled thermocline and intraperitoneal transmitting thermistors, describe the effects of handling on core temperature, and the effects of central injections of dopamine (DA) and prostaglandin E1 (PGE1) on the thermal preference and core temperature of rats. PGE1 (0–1.0 μg) produced a dose-related increase in core temperature, and selection of warmer ambient temperatures. Dopamine (0–400 μg) produced a dose-related hypothermia and cold-seeking behavior. With the gradient-on, DA-injected rats showed a deeper hypothermia, and later showed a significant rebound increase in core temperature not found when the gradient was -off. Except during behavioral thermoregulation, DA induced increases in motor activity.

BIOASSAY OF N-α-METHYLCYCLOALKYLMETHYLNORMORPHINES. Edward T. Uyeno, J. I. DeGraw, J. A. Lawson, H. L. Johnson, G. H. Loew and M. Ellis. Life Sciences Division, SRI International Menlo Park, CA.

In our search for non-addicting analgesics we conducted energy-conformation studies and selected N-α-methylcyclopropylmethylnormorphine and N-α-methylcyclobutylmethylnormorphine for synthesis. The cyclopropyl analog was approximately 85% as potent as morphine in the mouse tail-flick assay for analgesia and about twice as potent as the reference drug in the phenyl-quinone writhing assay. The analog was approximately one-fourth as potent as N-allylnormorphine in antagonizing the morphine-induced Straub-tail reaction. Thus, the results suggest that the N-α-methylcyclopropylmethyl analog may have further potential as a useful analgesic. The cyclobutyl derivative was ineffective in the tail-flick assay and only slightly active in the writhing and Straub-tail tests.

NEUROLEPTIC-INDUCED DEFICITS IN OPERANT RESPONDING FOR TEMPERATURE REINFORCEMENT. Aaron Ettenberg and Harry J. Carlisle. Department of Psychology, University of California, Santa Barbara, CA.

The hypothesis that neuroleptic drugs interfere with operant behaviors by attenuating the rewarding properties of positive reinforcers, was examined in rats trained to lever-press for external heat in a cold environment. Unlike traditional reinforcers, such as food and water, reducing the reward magnitude of heat (by reducing the intensity or duration of the stimulus) results in compensatory increases in

operant responding. Neuroleptic pretreatment (0.1, 0.2, 0.4 mg/kg of alpha-flupenthixol) produced only dose-dependent decreases in responding thereby interfering with the animals' ability to behaviorally maintain their internal core temperature. In an additional test paradigm requiring far less effort on the part of the subjects, alpha-flupenthixol did not alter the animals' preferred environmental temperature, nor did it disrupt the animals' behavioral thermoregulatory ability. These data suggest that at least part of the behavioral deficit observed during neuroleptic treatment is due to a disruption in the performance capabilities of the subjects.

LOW-DOSE AMPHETAMINE EFFECTS: TIME RANGE PATTERN ANALYSIS SUPPORTS BEHAVIORAL THEORY. Melvin Lyon. Psychological Laboratory, Copenhagen University, Copenhagen S., Denmark.

Testing predictions from the Lyon-Robbins theory of amphetamine effects, rats (N=10) received low doses of d-amphetamine, (0.02–1.0 mg/kg), in a counterbalanced NaCL—Amph.—NaCl sequence with 10–20 day intertrial intervals. Controls (N=6) received NaCl only. Behavior was videotaped, scored 'blind' into 16 categories and subjected to time range pattern analysis ($p=0.0005$) using Magnusson's THEME method. All doses produced effects different from NaCl, even including increased resting and grooming. Dose-related increases occurred, both in percentage of predrug NaCl patterns subsequently seen under Amph., and in percentage transferring from Amph. to postdrug NaCl. The results strongly support theoretical predictions.

ACTION OF PHENYLETHYLAMINE AND AMPHETAMINE ON AUDITORY STARTLE. Charles L. Kutscher and Bret Ingerman. Syracuse University, NY.

Phenylethylamine (PEA), an analogue of amphetamine, is found in the brain of humans and rats. Like amphetamine, it causes release of brain norepinephrine and dopamine. PEA and amphetamine were injected into male and female rats over a wide dosage range with auditory startle tested for 50 trials beginning either 0 or 30 min after injection. The action of both amphetamine and PEA was a function of these procedural variables. In males PEA and amphetamine potentiated or inhibited startle depending upon dosage and delay. PEA action was biphasic over the dosage range; high dosages which produced stereotypy inhibited startle. In females only, potentiation was seen.

NEUROBIOLOGICAL FACTORS INVOLVED IN THE BEHAVIORAL EFFECTS OF DRUGS. Steven I. Dworkin and Nick E. Goeders. Departments of Psychiatry and Pharmacology, Louisiana State University Medical Center, School of Medicine in Shreveport, LA.

6-Hydroxydopamine (6-OHDA) lesions of the nucleus accumbens (NA) have been shown to decrease cocaine self-administration. The decrease in responding produced by the lesion has been suggested to demonstrate a decrease in the reinforcing efficacy of cocaine, thereby implicating the involvement of the neurons affected in the central mechanisms of reinforcement. However, drugs have multiple effects on behavior and a specific neurobiological manipulation may alter effects other than the reinforcing properties. Six male Fischer rats were trained on a multiple fixed interval 2-min, fixed-ratio 5 schedule of food presentation. Six additional subjects were trained to discriminate the effect of 10 mg/kg cocaine from saline in a standard drug discrimination procedure. The effects of several doses of cocaine were determined before and after 6-OHDA lesions. These lesions altered several of the behavioral effects of cocaine.

EFFECTS OF SOMAN ON SCHEDULE-CONTROLLED BEHAVIOR IN RATS. Norman Hymowitz and Henry E. Brezenoff. Department of Psychiatry and Pharmacology, University of Medicine and Dentistry of New Jersey, New Jersey Medical School, Newark, NJ.

The behavior of rats was studied under a multiple fixed-interval 50-sec fixed ratio 25 (mult FI50-sec FR 25) schedule of food reinforcement. Presession administration of 30 and 40 μg/kg soman (IP) completely suppressed response rates, while doses of 5, 10, and 20 μg/kg suppressed responses under each schedule to a lesser degree. When the dose of soman was gradually increased, much higher levels of soman were required to suppress response rates.

SUPPRESSION OF DRUG-REINFORCED BEHAVIOR BY PRESENTATION OF AN ALTERNATIVE REINFORCER. Marilyn E. Carroll. University of Minnesota, MI

Six monkeys self-administered orally-delivered phencyclidine and saccharin under concurrent fixed ratio 16 schedules during daily three hour sessions. Three saccharin concentrations (0.003%, 0.03% and 0.3%, wt/vol) were tested in a nonsystematic order. For each saccharin concentration, the following series of phencyclidine concentrations was presented: 0.25, 0.5, 1, 0.25 (retest), 0.125, 0.0625, 0.0312, 0.25 (retest) and 0 (water with stimuli signalling phencyclidine). As the saccharin concentration increased, the phencyclidine concentration-response functions were lower and the peaks were shifted to the right. The two higher saccharin concentrations maintained behavior far in excess of phencyclidine, but saccharin deliveries decreased as phencyclidine concentration and intake (mg/kg) increased. The time course and patterns of phencyclidine-reinforced responding were also altered when saccharin was concurrently available. The results are discussed in terms of strategies to reduce drug-reinforced behavior, and measures of reinforcing efficacy.

INTRAVENOUS SELF-ADMINISTRATION OF PENTOBARBITAL AND ETHANOL IN RATS. Victor J. DeNoble, Paul C. Mele and Joseph H. Porter. Virginia Commonwealth University, VA.

Unlimited access to intravenous doses of ethanol (30, 60, 90, 180 and 360 mg/kg/infusion) failed to initiate and maintain lever pressing that resulted in its delivery. When pentobarbital was substituted (0.5 mg/kg/infusion) for ethanol, lever pressing increased. There were three indications of the positive reinforcing effects of pentobarbital: (1) a greater number of lever presses occurred when pentobarbital was response-contingent than when saline was available; (2) a greater number of responses were made on the pentobarbital lever than on a control "activity" lever, and (3) systematic changes in lever pressing were a function of pentobarbital dose. Following the pentobarbital self-administration regimen, changes in the ethanol dose effect function were studied

EFFECTS OF CESSATION OF ALCOHOL DURING PREGNANCY IN RATS. I. I. Lenzer,* C. L. Ryan and C. M. Hourihan. *Saint Mary's University and Carleton University, Canada.