ABSTRACTS

SYMPOSIUM: CONDITIONING FACTORS IN BEHAVIORAL PHARMACOLOGY

CONDITIONING OF DISCRIMINATIVE STIMULUS PROPERTIES OF AN ANTIHYPERTENSIVE DRUG

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Spontaneously hypertensive rats were trained to discriminate clonidine (0 02 mg/kg, IP) from saline in a drug-discrimination procedure Anise odor was then repeatedly paired with clonidine treatment outside the discrimination setting The odor stimulus gradually acquired the property of eliciting both a reduction in blood pressure and selection of clonidine-appropriate lever to nearly the same extent as clonidine itself Both clonidine and the odor-induced responses were antagonized by yohimbine, indicating that endogenous alpha-2 agonistic mechanisms may mediate both the clonidine- and CS-elicited responses

CONDITIONED DRUG 'REMINDER' STIMULI TRIGGER CRAVING AND AROUSAL IN DETOXIFIED OPIOID AND COCAINE ABUSERS

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Stimuli repeatedly associated with drug administration can become *classically conditioned* drug 'reminders' capable of eliciting subjective and physiological arousal, drug craving, and potentially, drug-seeking behavior Studies with detoxified opioid abusers and cocaine abusers have found (1) The most prevalent *subjective* response to drug-related stimuli is conditioned **craving,** reported up to five times as often as subjective high or withdrawal responses (2) Decreases in peripheral **skin temperature** and in **skin resistance**—both indicative of **arousal**—are the most common *physiological* responses to both opioid and cocaine 'reminder' stimuli (3) **Extinction** procedures produce significant reductions in both the subjective and physiological response to drug-related conditioned stimuli

EFFECTS OF ENVIRONMENTAL STIMULI ASSOCIATED WITH DRUG INJECTIONS ON PERSISTENT DRUG SEEKING BEHAVIOR SECOND-ORDER SCHEDULES

Steven R Goldberg Addiction Research Center, National Institute on Drug Abuse

Behavior maintained by drug injections can be enhanced by using simple schedules as components of more complex second-order schedules Under second-order schedules, completion of the component schedule, rather than an individual response, produces the drug injection according to another schedule Each component schedule terminates with the brief presentation of a stimulus that has been associated with drug injection Use of these procedures with monkeys and human subjects has allowed an evaluation of the role of conditioned environmental stimuli in the maintenance of persistent drug-seeking behavior and has provided a cross-validation of human and animal models of drug abuse

THE USE OF CLASSICAL CONDITIONING PROCEDURES IN BEHAVIORAL PHARMACOLOGY

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The classically conditioned rabbit nictitating membrane response (NMR) preparation offers a number of unique advantages to the study of the effects of drugs on learned behavior For example, the conditioned response (CR) and unconditioned response (UR) occur within the same effector system, therefore it is possible to directly study the effects of a drug on the processing of both the conditioned and unconditioned stimuli Over the past 7 years we have undertaken the study of the effects of two unique drug classes on the acquisition of the rabbit NMR In general, we have found that the hallucinogens facilitate and the opiates retard acquisition However, both drug classes appear to produce these effects by acting on the processing of the conditioned stimulus (Supported in part by DA 03986)

MILD ETHANOL INTOXICATION MAY ENHANCE PAVLOVIAN CONDITIONING

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Previous work suggested that mild ethanol intoxication during training could enhance Pavlovian conditioned heart rate and eyeblink responses in rabbits (Hernandez and Powell, *Psychopharmacology (Berlin)* 1986, Hernandez *et al*, *Behav Neurosci* 1986) More recent studies revealed that ethanol (200–400 mg/kg) can also enhance conditioned suppression of lever-pressing in rats tested 48 hours after Pavlovian training and ethanol treatment. These findings suggest that facilitation of Pavlovian conditioning may be a general effect of mild ethanol intoxication. Current studies examine the effects of ethanol on Pavlovian conditioned changes in different baseline behaviors in rats, to further assess the generality of these findings (Supported by USPHS No R23-AA06817 and by VA research funds)

INVITED ADDRESSES

DRUG EFFECTS AND THE PUNISHED UNIT

G Galbicka Walter Reed Army Institute of Research

Galbicka and Platt (1984) showed that behavior was maintained in squirrel monkeys by response-contingent shock presentation only when long interresponse times were differentially punished The present paper incorporates the notion of long-interresponse time punishment in analyzing the effects of drugs under situations involving shock-maintained behavior in relation to effects under more traditional punishment paradigms By focusing on the difference in the punished unit under each paradigm, the effects of drugs on each may be integrated (Galbicka, G and J R Platt Interresponse-time punishment a basis for shock-maintained behavior *J Exp Anal Behav* **41:** 291–308, 1984)