responding were engendered by point subtractions attributed to another person, and maintained by initiation of intervals free of point subtractions. Triazolam produced dose-dependent decreases in point-maintained responding, while very different dose-response functions were observed for aggressive and escape responding.

CHOLINESTERASE INHIBITOR MSF ENHANCES ONE-TRIAL REWARD LEARNING IN AGED RATS. David H. Malin, Patricia J. Toups, Linda D. Osgood, David E. Fowler, K'Ann A. Warren and Stephanie J. Crouse. University of Houston—Clear Lake, Houston, TX.

Eighteen-month-old rats show significantly less retention than 2–3-month-old rats on a one-trial food-rewarded task in a five-arm sunburst maze. Methanesulfonyl flouride (MSF) is a selective CNS acetylcholinesterase inhibitor. Ten 18-month-old rats injected IP with 0.5 mg/kg MSF before the single training trial showed significantly better retention 24 hours later in terms of speed and errors than eleven 18-month-old rats receiving injection vehicle. Pretreatment with 0.5 mg/kg MSF failed to increase retention in 2–3-month-old rats. MSF administered prior to the retention trial was ineffective, suggesting that it may effect memory formation rather than memory retrieval. (Supported by Moody Foundation and UH-CL Fac. Res. Fund.)

MONOAMINE OXIDASE INHIBITORS IMPROVE PERFORMANCE IN ANIMAL MODELS OF HYPERACTIVITY. Elizabeth A. Reyes, M. Jack Lee, Allen E. Butt and Gordon K. Hodge. University of New Mexico, Albuquerque, NM.

Attention deficit hyperactivity disorder (ADHD) is characterized by impulsivity and attention deficits. The relationship between dopamine (DA) deficiency and ADHD symptoms was examined and the therapeutic efficacy of *d*-amphetamine, pargyline, and clorgyline was assessed. To delineate the extent of DA involvement, 6-hydroxydopamine was administered to 5-day-old rats. A modified differential reinforcement of low rate responding light discrimination task was used to measure impulsivity, defined as commission errors. Rats treated with 6-hydroxydopamine demonstrated impulsive behavior, which was attenuated by clorgyline or pargyline; amphetamine treatment was less efficacious. (Supported, in part, by NIH grant RR08139; UNM RAC grant 88-45; and APA Neuroscience Fellowship to E. A. Reyes.)

SCOPOLAMINE ANTAGONIZES HALOPERIDOL'S EFFECTS ON RATE AND FORCE OF RESPONSE. Stephen C. Fowler and Michael A. Kirkpatrick. University of Mississippi, University, MS.

Scopolamine hydrochloride (0.1 mg/kg), a centrally-acting anticholinergic, substantially reversed the rate decrementing and peak force incrementing effects of the antipsychotic drug haloperidol (0.08 mg/kg) in laboratory rats. The peripherally active methyl form of scopolamine did not antagonize haloperidol's effects. Not only do these data support the idea that neuroleptic-induced decrements in rats' behavior are similar to extrapyramidal side effects in man, but the data also suggest that the neuroleptic-related elevations in peak force of rats' operant responses are manifestations of the same process whereby neuroleptics decrease response rate.

BEHAVIORAL EFFECTS OF TWO D_2-SELECTIVE DOPAMINE ANTAGONISTS, RACLOPRIDE AND SPIPERONE. Leonard L. Howell, DeLoris M. Wenzel and Larry D. Byrd. Yerkes Regional Primate Research Center, Emory University, Atlanta, GA.

Raclopride (0.001–0.03 mg/kg) and spiperone (0.001–0.01 mg/kg) were administered intramuscularly (IM) and intravenously (IV) to squirrel monkeys (*Saimiri sciureus*) trained to lever-press under a fixed-interval (FI) 300-sec stimulus-shock termination schedule. A session consisted of 10 or 13 consecutive FI components, each followed by a 60-sec timeout. Drugs were administered IM 5 min presession, and IV either 5 sec presession or during sequential periods of FI responding (cumulative-dosing). Both drugs produced dose-dependent decreases in response rates, and 0.01 mg/kg of either completely suppressed responding. Although raclopride and spiperone were equipotent, they differed markedly in onset and duration of action. Peak effects occurred 5–10 min after raclopride administration, and partial recovery of responding was seen within 30–40 min. Test sessions one day after raclopride administration were typical of control performance. In contrast, peak effects occurred 25–30 min after spiperone administration, and response rates were markedly suppressed up to 48 hr. Complete recovery of rate and pattern of responding occurred 2 days after an intermediate dose (0.003 mg/kg) and 3 days after the highest dose (0.01 mg/kg) of spiperone. Route of administration did not affect potency or time course of action of either drug. (Supported, in part, by USPHS Grants DA-01161 and RR-00165 to the Yerkes Research Center from the Division of Research Resources, NIH.)

EFFECTS OF *d*-AMPHETAMINE ON CHOICE OF SOCIAL VS. MONETARY REINFORCEMENT. Stephen T. Higgins, John R. Hughes, Warren K. Bickel and Mimi Benedict. University of Vermont, Burlington, VT.

Two mutually exclusive options (socializing versus obtaining monetary reinforcement) were concurrently available to eight volunteers during 60-min experimental sessions under controlled laboratory conditions. Using a discrete-trial choice arrangement, subjects chose every three minutes between an option in which they could converse with another same-sex volunteer and an option in which money was earned by providing speech monologues. *d*-Amphetamine (12.5 and 25 mg/70 kg) significantly increased the percent of trials subjects chose the social over the monetary option, and produced a nonsignificant increasing trend in total seconds of social conversation. Additionally, *d*-amphetamine significantly increased subject ratings of effects indicative of greater sociability such as friendliness, elation and energetic. The present results provide further evidence suggesting that *d*-amphetamine may increase the relative reinforcing effects of social interaction.

TRAINING DOSE AS A DETERMINANT OF MORPHINE'S DISCRIMINATIVE STIMULUS PROPERTIES. Sondra R. Mattox, Mitchell J. Picker and Linda A. Dykstra. University of North Carolina at Chapel Hill, Chapel Hill, NC.

The purpose of this study was to evaluate the influence of training dose on morphine's discriminative stimulus properties. Rats were trained to discriminate either 3.0 or 10 mg/kg of morphine sulfate from saline. After a stable discrimination was established, substitution tests were conducted in both groups with the mu opioid agonists, morphine, fentanyl, and *l*-methadone and the kappa opioid agonists, U50,488, bremazocine, ethylketocy-