A8

ACQUISITION OF FOUR-DRUG DISCRIMINATIONS IN THE TWO-BAR DRUG DISCRIMINATION TASK. D. A. Overton and M. Hayes., Temple Medical School, Eastern Pennsylvania Psychiat. Inst., 3300 Henry Ave., Philadelphia, PA 19129.

This study was conducted to determine whether rats are capable of concurrently discriminating four unrelated drugs (A,B,C,D) in the 2-bar operant drug discrimination task. The sequence of drug conditions during successive sessions was ABCDABCD, etc. During A and C sessions, bar 1 presses were reinforced with 0.1 cc saccharine-sweetened water on an interlocked FR10/FI90" schedule. During B and D sessions, bar 2 presses were reinforced. Criterion discrimination was 50% correct presses prior to the first reinforcement during 4 out of 5 consecutive sessions with each drug. The table below shows sessions to the beginning of criterion performance (STC) for each of the 6 rats trained. These results indicate that rats can concurrently discriminate most sets of four training drugs, although certain specific drug combinations may be difficult or impossible to discriminate.

RAT	BAR 1 DRUGS	(A&C)	BAR 2 DRUGS	(B&D)	STC
1.	fentanyl	0.04[s]	phenobarbital	50	0
	nicotine	0.4	dextromethorphan	25	
2.	nicotine	0.4	scopolamine	0.2	29
	pilocarpine	2	mecamylamine	8	
3.	mecamylamine	8	pilocarpine	5	74
	nicotine	0.4	scopolamine	0.4	
4.	ethoheptazine	50	cyclazocine	10[c]	23
	morphine	4	dextromethorphan	35	
5.	imipramine	30	ethosuximide	150	10
	Dramamine	20	metrazol	20	
6.	metrazol	25	phenobarbital	50	18
	ethanol	1400	ketamine	25	

s = subcutaneous inject. c = suspended in CMC.

A9

DISCRIMINATIVE STIMULUS EFFECTS OF NALTREXONE (NTX) IN NARCOTIC-NAIVE AND NARCOTIC-PRETREATED PIGEONS. R.J. Valentino, S. Herling, and J.H. Woods. Dept. of Pharmacology, Univ. of Michigan, Ann Arbor, MI 48109.

Narcotic-naive pigeons were trained to discriminate an IM injection of NTX (32 mg/kg or 56 mg/kg) from saline in a task in which 20 consecutive responses on either the left or right key, depending on whether NTX or saline had been administered, produced access to mixed grain. In order to determine whether narcotic antagonists produced discriminative stimulus effects similar to those of NTX, these pigeons were tested with different antagonists during sessions in which 20 consecutive responses on either the NTX or saline key produced access to mixed grain. Naloxone generalized to NTX in 4 of 5 pigeons. In contrast, other narcotic antagonists, including cyclazocine, nalorphine, diprenorphine, WIN 44,441, MR 2266, MR 2267, MR 1452, and MR 1453 generalized to NTX in less than 50% of the pigeons. These pigeons were then administered 100 mg/kg morphine daily while further training and testing were postponed for 5 days. After the 5th day, morphine administration continued and animals were trained to discriminate 0.1-0.3 mg/kg NTX from saline. NTX was 170 times more potent in producing discriminative stimulus effects and response rate suppression in pigeons that were chronically treated with morphine. Likewise, naloxone generalized to NTX in each pigeon and was 100 times more potent in these animals. In contrast to the results obtained in narcotic-naive pigeons, cyclazocine, nalorphine, diprenorphine, WIN 44,441, MR 2266, and MR 1452 generalized to NTX in morphine-pretreated pigeons. The dextro isomers, MR 2267 and MR 1453, however, produced primarily saline-appropriate responding, indicating a stereospecific requirement for this effect. These results suggest that the discriminative stimulus effect of NTX in narcotic-naive animals is not related to antagonist activity since few narcotic antagonists share this cue. However, the chronic administration of morphine to animals alters the effects of narcotic antagonists such that they share common discriminative stimulus effects. Supported by USPHS Grants DA 00154 and DA 00254.