

Introduction: Schedule-induced Polydipsia and Oral Intake of Drugs

P. B. DEWS

Laboratory of Psychobiology, Department of Psychiatry, Harvard Medical School, Boston, Massachusetts

ONE phenomenon revealed in experimental studies on behavior that has immediate relevance to drug abuse, and particularly alcohol abuse, is the phenomenon of adjunctive behavior. Adjunctive behavior is the name given by Falk, its discoverer, to behavior that comes under strong control of a schedule although the behavior is not involved in the program of the schedule itself. By program of the schedule is meant the relations of stimuli and responses determined by circuitry external to the subject. A schedule may arrange, for example, that when some variable but predetermined interval of time has elapsed, then the next time the subject operates a key (responds) food will be delivered: this is the basis of a so-called variable-interval schedule and with an average interval of up to a few minutes, typically engenders a steady rate of responding. The same schedule also generates drinking, although drinking is not involved in the program of the schedule, and the drinking becomes excessive so that a rat may drink as much as one-half

its body-weight in water during a 3.17 hr session, which is several times the normal 24 hr intake (1). A similar effect has been seen in other species and with eating as well as drinking and with certain other schedules. The adjunctive polydipsia has been shown to be strongly entrained by the schedule although, to repeat, it is not prescribed by the program of the schedule. Adjunctive behavior is robust, develops spontaneously and regularly under the right conditions and does not go away. It has irresistible appeal as a mechanism of drug abuse, but it is not enough to see in principle how some aspects of drug abuse may be adjunctive behavior; quantitative relations for particular drugs and patterns of behavior in relation to particular schedules need to be determined, involving a great deal of work, some of which will be presented in subsequent papers.

REFERENCES

1. FALK, J.: Production of polydipsia in normal rats by an intermittent food schedule. *Science* **133**: 195-196, 1961.