

## Human Neuropsychology: Some Differences Between Korsakoff and Normal Operant Performance\*

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**Summary.** Operant reinforcement schedules were used to investigate the effects of changes in reinforcement rates on the behavior of alcoholic Korsakoff (amnesic) patients and normal control subjects. In one test, both groups were exposed to pairs of variable-interval (VI) reinforcement schedules which operated concurrently. The distribution of reinforcements controlled the distribution of responses of normal subjects to a significantly greater extent than those of the Korsakoff patients. In a second test, two VI reinforcement schedules were arranged to run one at a time in succession. Reinforcement-rate differences with the successive (multiple) schedules did not produce corresponding response-rate differences for either group of subjects. The findings stress the complexity of the alcoholic Korsakoff syndrome, and emphasize the need to consider possible motivational abnormalities as determinants of alcohol-induced amnesia. In addition, results underscore both the value and the limitations of using operant procedures in human learning research.

### Introduction

The approach taken in the present paper complements Luria's general view of the brain as a complex and interrelated functional system (e.g., Luria, 1964), and his specific view of Korsakoff's syndrome as a massive memory disturbance forming 'part of a wider symptom-complex' which includes 'a general diminution of the patient's activity' and 'confusion in his assessment of his surroundings' (Luria, 1976, p. 18).

The critical lesion sites associated with Korsakoff's syndrome are thought to include the mammillary bodies of the hypothalamus and/or the dorsomedial nucleus of the

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