CHANGES IN AVOIDANCE CONDITIONING FOLLOWING PSYCHOTHERAPEUTIC TREATMENT

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The use of avoidance conditioning in human subjects as a method for the diagnostic determination of conditions adversely affecting the functional integrity of the cortex was proposed originally by Gantt as early as 1938. In a series of subsequent studies the method was advocated for the determination of Korsakoff’s syndrome (1), generalized cortical pathology (2), and for the differentiation of psychogenic from organogenic psychoses (3).

The rationale for the clinical use of this test lies in the experimental observation that natural (human) or deliberately produced (animal) cortical lesions often result in the abolition of or decrement in previously established conditional reflexes and in a markedly increased difficulty in the formation of new conditioning. Gantt (1) found that patients with Korsakoff’s syndrome failed to condition in a simple avoidance situation with visual CS’s.

In a previous unpublished study performed on a group of elderly psychotic patients with and without neurological evidence of cortical damage, the following findings relevant to the question of validity were obtained:

1. All patients who had evidence of cortical pathology on the basis of EEG and neurologic examination failed to condition.

2. In another group matched for age and NP diagnosis but without EEG and neurological evidence of cortical pathology, approximately 50 per cent failures in conditioning were encountered.

3. Repeated neurological examination of the portion of this latter group who failed to condition did not reveal demonstrable signs of cortical pathology.

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Two possible explanations of these findings were advanced:

a) Since all patients with clinically demonstrable signs of neurologic damage failed to condition and a portion of the group without these signs also failed to condition, the technique of conditioning may more sensitively reflect early or diffuse cortical damage than orthodox neurological procedures, or,

b) The failure of a patient to condition may be due to a complex of factors, among which is the factor of cortical pathology. If, for example, failure to condition reflects a lowered level of cortical efficiency, then cortical damage may only be considered a special case of irreversible degradation of function. Transient disturbances in cortical efficiency should be revealed by testing during disorder and following recovery.

The present study begins with the hypothesis that factors other than those of cortical pathology may influence conditioning and tests the validity of this assumption. The problem was that of determining changes in conditioning ability in a control and matched experimental group of psychiatric patients from a period prior to the beginning of group psychotherapy to a period immediately following the termination of the therapy. If changes in conditioning ability could be found in the experimental group (receiving psychotherapy) but were not found in the control group (resident on the ward, but not receiving psychotherapy), the hypothesis would be supported.

Method

Thirty-three chronic ward patients participated in the study. They represented the population of an entire ward except for evident cases of neurologic damage, epilepsy, etc. which were excluded from the study. The groups were divided randomly into seventeen controls and sixteen experimental patients. The latter group was subjected to various psychotherapeutic manipulations directed toward enforcing social interchange and the formation of small groups. This study was performed by other workers, and the results will be reported separately.

Conditioning procedures were performed on the entire thirty-three patients prior to the beginning of therapy. Following completion of the therapy in approximately three months the entire group was re-tested.

The procedures for conditioning are described fully elsewhere (4). They involve the presentation of paired light and tone stimuli at one-minute intervals alternately reinforced by a painful faradic shock of one-second duration to the right hand. A cradle for the right arm provides both a measure of motor reactivity and a means for avoidance of the shock. Continuous PGR recordings are made throughout the whole conditioning session. After 10 trials the subject is instructed to avoid shock by pressure on the right arm rest in anticipation of the shock. The stimuli are then continued, and a graded series of instructions are given after each successive failure in response until the final instruction