Studies on Sensory Deprivation: V. Part 7. General Discussions and Concluding Remarks

STUDIES ON SENSORY DEPRIVATION

PART 7. GENERAL DISCUSSIONS AND CONCLUDING REMARKS

By

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The results and discussions of preceding papers were summarised and the validity of our hypothesis regarding the selective effects of sensory deprivation was exmained. Findings reaffirmed our assumption and interpretation. Among them, the results of EEG seemed to suggest some physiological correlative with the differentiating effects upon the psychological functions.

Since 1961 we have been carrying out a series of experimental study on sensory deprivation. The experiments reported in the preceding section were performed in 1965. The general results will be summarized and discussed with reference to the results of our previous experiments.

The experiments were designed to examine our hypothesis regarding the differentiating and selective effects of sensory deprivation upon various functions of subjects and to gather some data which are consistent with our previous findings and, if possible, to get some idea of the new technique to examine the effects of sensory deprivation.

Experiments of 24-hr. sensory deprivation were performed, using 12 male undergraduate students as subjects. The techniques of inspecting and testing the effects of sensory deprivation were improved and refined. Generally speaking, the results of the experiments reaffirmed again our hypothesis, accumulating some new data which were in accord with our previous findings.

(1) According to the observation of subjects' overt behaviours by television and records of interview after sensory deprivation, most subjects fell asleep in a few hours after the beginning of the confinement, though they entered the cubicle at one or two o'clock in the afternoon. When they woke from a sleep of 2 or 3 hours, the level of their mental activities, especially the function of conscious self-control seemed more or less to be reduced.

The subjects experienced the feeling of unpleasantness, anxiety and sometimes irritability. Remarkably, the perspiration during sensory deprivation and the feeling of fatigue of the whole body after it was reported by almost every subject. The frequency of the hallucinatory experiences proved to be the highest of all experimental

groups of our previous studies. Such results may be reliable enough, because in this study the technique of the observation and interview was improved.

Frequent representation of hallucinatory experiences may be induced by the impariment of the reality consciousness and relative higher activity of the inner experience as effects of sensory deprivation.

(2) As to EEG, the techniques of taking and analyzing the records were more improved, using a new analyzer which had two bands. Slight slowing tendencies of the alpha and theta waves were reaffirmed clearly. The integrated value of EEG revealed that the effects of sensory deprivation were more remarkable in the frontal region than in the temporal and the occipital region. Such selective effects of sensory deprivation upon EEG remind us of the differentiating effects upon the mental functions. This finding may give a clue to the explanation of the selective effects of sensory deprivation upon various psychological functions.

(3) To examine the differentiating effects of sensory deprivation upon learning and memory in a broad sense, recall of the past experiences, verbal maze learning, serial learning and immediate memory were tested. The results showed scarcely any significant differences from those of control group, except the case of immediate memory, where some impairment of the function of organizing individual items were suggested. Thus the effects of sensory restriction on the learning process remainded still ambiguous. In view of the frequent representation of hallucinatory experiences, however, the task-free recall may be more facilitated than the imposed recall.

(4) In TAT-type projective tests an impairment of apperceiving and verbalizing functions was inferred from the results that the syllable numbers and productivity of responses decreased though subjects were in the state of stimuli-hunger. In tests performed by interphone system the number (frequency) of negative affiliation increased. And the deterioration of higher empathic function was suggested from the increase of the neutral responses without any dramatical emotionality immediately after sensory deprivation.

(5) Effects of sensory deprivation upon perceptual function corresponded with our previous assumptions. The threshold at which the Randult ring is discriminated tended to become lower after sensory deprivation. The findings supported our hypothesis proposed from the results of Bender Gestalt Test, and well accorded with the effect of lowering the threshold of pain and taste sensation,

The direct or verbal suggestion affected S's estimation of weight of boxes, while indirect suggestion had no significant effect. This indicates that the organizing function of the serial impressions of a progressive weight was reduced after sensory deprivation.

The size constancy tended to increase after sensory deprivation. This showed the decrease of the function of organizing the visual stimuli, and also the dominance of the naive and stimuli-dependent attitude, as seen in the ineffectiveness of the indirect suggestion.

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Zusammenfassung

Die Resultate der früheren Berichte über die Einflüsse der 24 Stunden währenden sinnlichen Entziehung wurden kurz zusammengefasst und diskutiert. Unsere Voraussetzung wurde durch manchen neu beabsichtigten Versuch bestätigt. Die Tatsache, dass der Einfluss auf das EEG der frontal Region intensiver als die der anderen Regionen war, entspricht den verschiedenen Einflüssen der sinnlichen Entziehung auf die psychischen Funktionen.