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STUDIES ON THE SENSORY DEPRIVATION: VII

PART 3. RESULTS OF THE PERSONALITY TESTS AND INTERVIEW

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Self-image: The effects of sensory deprivation on the self-image described in the past tense were investigated by the use of a modified Twenty Statements Test. The main findings are: (1) No effect on the number of descriptions was found. (2) The degree of satisfaction significantly transferred into the direction of the "satisfactory". The self-rating of the social desirability was significantly shifted to the "desirable". (3) The statements belonging to the category of the "Out" were found more frequently and those belonging to the "In" decreased in the post-test.

P-F study: An attempt to reaffirm, the effects of the sensory deprivation on the ego-function and also to investigate those on the function of the super-ego was made by means of the Picture Frustration test. There were no effects on the scores of GCR. As to the transfer of response, the transfer of N-P (Need-Persistence) factor was significant in the experimental group, and the significant differences in the rate of the transfer of response were recognized between both groups. No effects on the Superego-blocking situation were observed in the procedure adopted in the present study.

Interview: The effect of SD upon conscious experience and the relation between tolerance for SD and Ss' ordinary inside life were investigated. The main findings are as follows: (1) Ss' set for experiment and consciousness were influenced by previous informations about the experiment. (2) Their tolerance for SD seems to be related with tendency of thinking in their daily life.

Section I: Personality tests

INTRODUCTION

In our previous studies by means of the Rorschach test, the TAT-like projective test, the self-image and etc., the main effects of the sensory deprivation on some aspects of personality were as follows; the impairment of the integration ability, the inhibitory operation to the apperceiving and verbalizing processes of the contents of TAT cards, the reducing of the awareness of the self, and the deterioration of the ego-functions. Further investigation was carried out in the present study by the use of the Twenty Statements Test and Picture-Frustration (P-F) Study.

I-1 Self-image

It is generally known that what a man thinks of himself depends on his self-image, which has been built up through the complicated processes and also seems to be

consistent and unchangeable to some extent. At the same time, however, it is also true that the self-image is influenced delicately by his conditions of inner or external environments.

In order to make a study of the effects of sensory deprivation on the self-image, the investigations have been carried out up to now using some modified methods of Twenty Statements Test. The investigation which was attempted in 1965 made it the chief aim to clarify which tense (i.e. past, present or future) was chosen by subjects before or after the confinement period. And subjects were simultaneously required to estimate each description in terms of desirability. The other investigation which we made in 1967 paid attention to the degree of the awareness and the acceptance and the evaluation of the social desirability in the case of present tense.

Therefore, the purpose of the present study is to investigate the effects of sensory deprivation on the self-image in past tense by a further modified method of Twenty Statements Test. Moreover subjects had to estimate (1) when did it occur?, (2) the degree of acceptance, (3) the evaluation of social desirability, and (4) the degree of importance for himself.

The way of card-sorting was adopted in the present study from the following two reasons; it may be not influenced by the descriptions immediately before, and it may be convenient for Ss to sort out in self-rating.

Procedure: A modified method of Twenty Statements Test in past tense was employed.

The following instruction was given to subjects: "There are 20 numbered cards. Please write one answer concerning yourself on each card in past tense which has happened to occur to you. Go along fairly fast, for time is limited." Ten minutes were available to describe.

Furthermore, subjects were asked to check (1) the time when it happened (2) the degree of acceptance (3) the degree of social desirability (4) the degree of importance.

RESULTS

(1) The number of description

The number of description, as can be seen in Table I-1-a, on the post test is inclined to increase not only in exp. group but also in cont. group. This tendency of increase can be attributed to the factor of the re-test (Kikuchi, T. 1968).

Table I-1-a The Number of Description

	Exp. G.	Cont. G.
Pre-test	15.5	13.3
Post-test	17.2	14.7

(2) When did the affair occur ?

No remarkable difference between exp. and cont. group was found (Fig. I-1-a.)

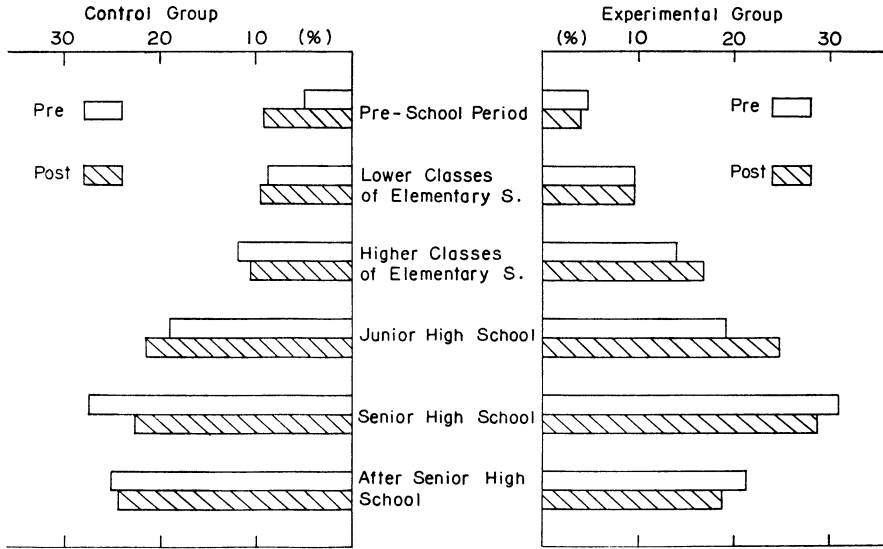


Fig. I-1-a When did it occur?

(3) The degree of satisfaction

The degree of satisfaction was classified into three degrees, that is, 'the satisfaction' (very and slightly satisfaction), 'dissatisfaction' (very and slightly dissatisfaction) and 'uncertain' as shown in Fig. I-1-b. Both groups, in the post-test, present a tendency to increase in the satisfactory estimation and to decrease in the dissatisfactory estimation

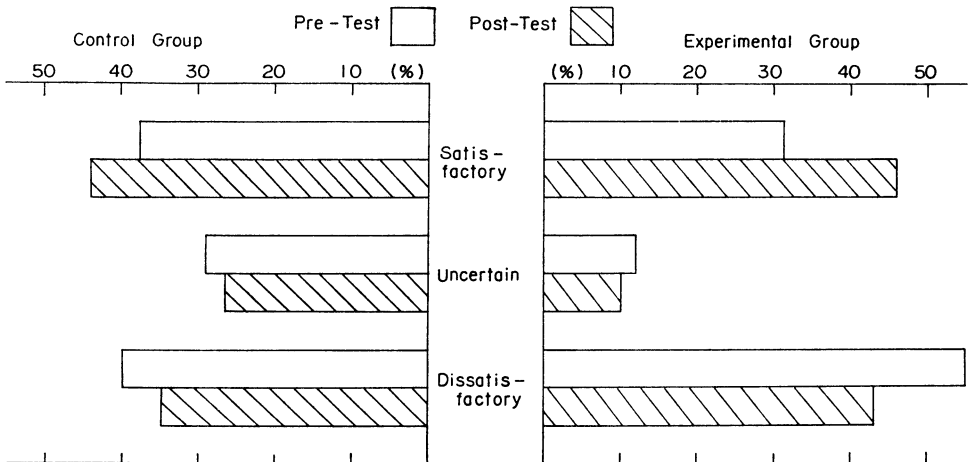


Fig. I-1-b The degree of Satisfactory

tion. The degree increment or decrement of estimation is statistically significant in exp. group, and is non-significant in cont. group. The decrease of dissatisfaction in exp. group agrees in principle with the previous report. It is noticeable, however, that the increase of satisfaction was not recognized in the previous study.

(4) The degree of social desirability

Fig. I-1-c showed that there is a tendency of change to 'desirable' in both groups at the post-test. The change is significant in exp. group, even though the tendency is not significant in cont. group, when pre-test is compared with post-test within the group. The direction of this change agreed with that in the previous studies.

It seems, however, that this change reflected that of the aspect of description but not the shifts of estimation on the line of the same aspects between pre and post tests. Because this phenomenon is due to the fact that the rate of descriptions as to the

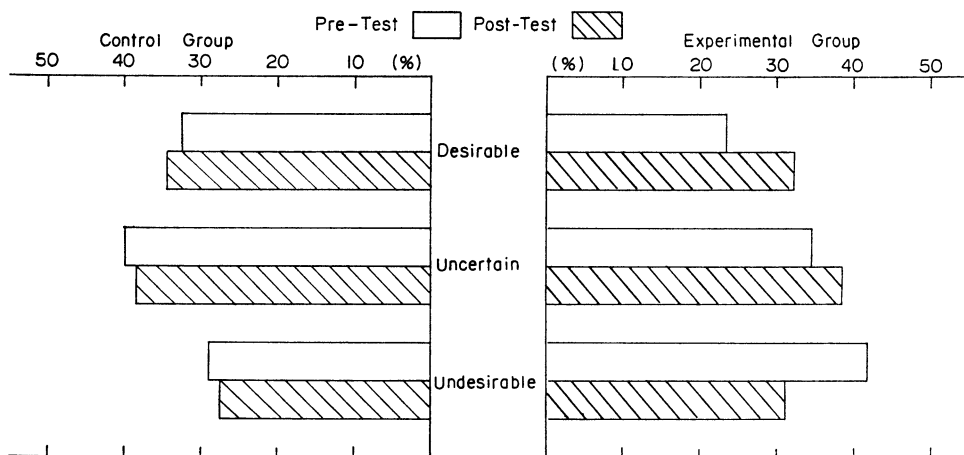


Fig. I-1-c The degree of Social desirability

same aspect between pre and post test is 43/172 (25.2%) in exp. group and 34/447 (7.6%) in cont. group. In other words it is because the self-estimation changed into the positive estimation as a whole, in spite of the fact that the rate of the same description in the whole description in both tests is not so large.

(5) The content of description

Three categories of "Out", "In" and "The others" were employed to classify the contents of description. The category of "Out" involves the statements concerning the interaction between a man himself and other persons or that between him and the external world and the descriptions as to the anchoring oneself to his environment, such as "I liked music.", "I was a high school boy.", "I traveled last year." and so on. The category of "In" contains such statements that subject introspected himself with

regard to his character, disposition and attitude, for example, "I was sincere.", "I often got angry.", "I felt regret for my unkindness." and etc.

The results of the content of description were shown in Fig. I-1-d. Both groups show the similar tendency that the description belonging to "In" is much and "Out" is few in the pre-test, while in the post-test "In" decreases and "Out" increases. However there are some differences in the shift of proportion of "Out" and "In" between exp. and cont. groups at the post-test.

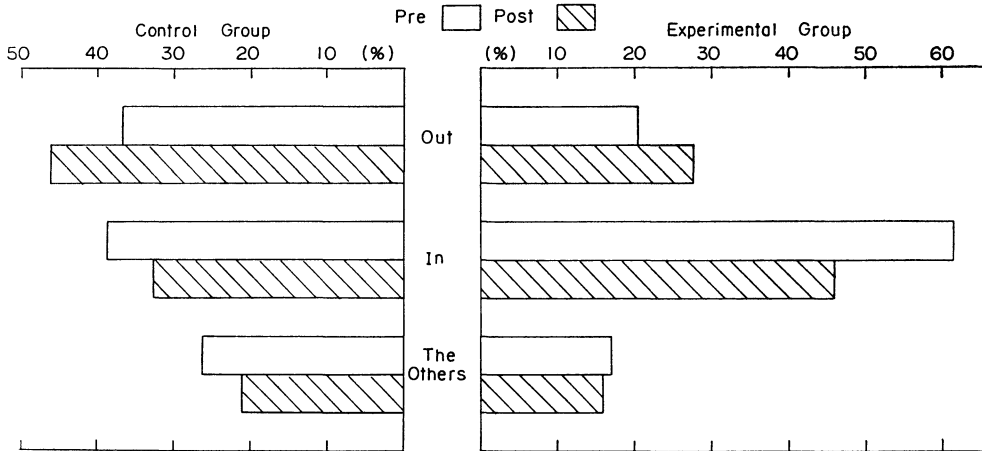


Fig. I-1-d. The results of the content of description

DISCUSSION

The previous two experiments revealed some effects of sensory deprivation on the self-image. Sato, I. (1965) reported the decrease of the "past" tense descriptions after sensory deprivation. Oyamada, T. et al. (1967) suggested in the previous paper the following findings: (1) There was no change on the number of description and the mode of the awareness. (2) The degree of the awareness decreased significantly and the degree of the acceptance had a general tendency to shift in the direction of the "acceptable". (3) There was little effect on the social desirability.

The results in the present study by means of the past tense also showed the similar result mentioned above. No change was observed in the number of description, and the evaluation of the acceptance was significantly shifted to the direction of the "acceptable". The following two results should be noted here. One is the change to the positive evaluation as the social desirability, and the other is the increment of "Out" category and the decrease of "In" category.

As mentioned above, the category of "Out" included the interaction of the self with the other persons or the external environment. Therefore, the increment of the description of "Out" category probably indicates the desire for the human contact after the release from the restriction. These findings agree well with the previous ones, i.e.

the increment of affiliation effect, which is shown by the TAT-like projective test or the interview with the Subjects after the confinement (Oyamada, T. et al. 1965, Sato, I. et al. 1965).

In other words, it is probably suggested that sensory deprivation conditions may lead a man to accept himself well, to desire for the contact with other persons and to evaluate himself positively in terms of desirability.

I-2 Picture Frustration Study

Purpose: From the previous findings concerning the personality tests, the functional deterioration of the ego was reported, as mentioned above. Then, we make an attempt to reaffirm the effects of the sensory deprivation on the ego-function and moreover to investigate the effects of the sensory deprivation on the function of the super-ego, using the Picture Frustration (P-F) test. Main problems in the present study are GCR (General Conformity Rating) and the transfer of response. The GCR which is in substance corresponding to the popular response in Rorschach Test is the indication of the ability and possibility of the adjustment in common sense behavior. On the other hand, the transfer of responses in each factor is the indication of (1) the emotional stability or instability, (2) the conflict in the expression of aggression, and (3) the tolerance for frustration situation.

Method: The 24 situations in the shifts of the P-F study were divided into two series of 12 situations. The former 12 situations are given to the subjects at the pre-test, and the latter half at the post-test.

Results: (1) As for the Superego-Blocking situation, there is no difference between experimental and control groups.*

(2) The scores of GCR in the post-test were tended to be higher than those in the pre-test in both groups but not significant statistically (Table I-2-a). This tendency seemed to be chiefly caused by the tension-reduction on the re-test. Furthermore no difference was found between groups.

(3) The following two findings were noticed in the transfer of response as can be seen in Table I-2-b; (i) the transfer of the N-P (Need-Persistence) factor in the experimental group is significant ($p < .01$). That is to say, this might result from the reduction of Need-Persistence-tendency. (ii) The significant difference in the rate of

Table I-2-a The score of GCR

	Exp. G.	Cont. G.
Pre	3.80	3.50
Post	3.95	3.82
GCR %	55.3 %	52.7 %

* Provided that the same shall not apply to control group in 1967. Some changes in expression and rating were observed, when the results of the pre-test was compared with that of the post-test within the control group in 1967.

Table I-2-b Types of Response and The Direction of Response

	E		I		M		O-D		E-D		N-P	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Exp. G.	5.6	5.2↘	3.0	3.3↘	3.4	3.7↘	2.4	3.1↘	6.1	7.3↘	3.4	1.7↗
Cont. G.	5.5	4.5↘	3.3	3.4↘	2.8	4.3↘	2.0	2.7↘	6.4	5.9↘	3.9	3.2↘
E.G.-C.G. t p									1.89 <.1		3.26 <.01	

the transfer of response was recognized between both groups.

These results may indicate that the sensory deprivation gives rise to the reduction of the drive or will of task-solution, and moreover may affirm through the use of the P-F test the previous findings that the reduction or the ego-function is brought about by the sensory deprivation.

From the results mentioned above, the following conclusions were drawn. Although we could not necessarily make clear the effects of the sensory deprivation on the superego-function, its effects on ego-function correspond to, or are reaffirmed by, our previous findings. As a question about the method or procedure in the present study was aroused, a further investigation on the superego function may be required.

Section II: Interview

Problems: (1) To investigate what conscious experiences are aroused by sensory deprivation, (2) to find out some characteristics of subjects' ordinary inside life, and (3) to find out the relation between these conscious experiences and the tolerance for sensory deprivation and these characteristics.

Method: By means of interview (immediately after SD) and questionnaire (handed after interview and that should be sent back in several days) such followings are investigated as: (1) whether or not the subject had any information about SD experiment and items of face sheet and what kind of attitude he takes toward the experiment, (2) a) effects of SD upon his senses, physical conditions, feelings, needs, and thinkings. b) his feelings about conditions of the experiment. (3) reports about his daily life, especially inside life and habit or tendency of thinking. Furthermore, results are dealt not only in aspect to those items but also to individual aspect, and are compared with actograms.

Results and Discussion: (1) Seven of ten Ss had got such informations about the experiment, in lecture of psychology and from some friends, as he will be left in a confinement room, under SD condition, tested about his personality characteristics, and measured by EEG. This fact suggests that Ss were influenced by these informations when they made up their mind to take part in the experiment as Ss. Many of them made up their minds, before the experiment began, to pass asleep as much as they could

or thinking of something in order to avoid dullness, fear or fatigue. In fact, many of them passed the time just as above, although one of them could not sleep and three of them could not help thinking against their intention.

(2) As to consciousness under SD, no one experienced the hallucination-like experience this time, too. As to feelings, before the experiment, Ss feel such negative feelings as unpleasantness, excitement, tension and anxiety. This may be understood in respect to the fact that previously Ss had considerable informations. During the experiment such state continued somewhat reinforced, while on the contrary, after the experiment, these negative feelings change into such positive feelings as calmness, relaxation and stability. As to consciousness under SD, most of them are recollections, plans for future and fantasy, the rest being 1) such needs as to activity, to sports or to eat and drink which are suppressed during the experiment, or 2) such feelings as constrainedness, hatred and anxiety and 3) tendency of consciousness fixed on such physical pain as sound of room-cooler, hotness or coldness, light or dark lighting, wearing goggle, form of bed (chair), and the code of EEG and GSR. When the experiment finished, Ss felt at ease and said that they would soon go home and enjoy sports, readings, listening to jazz-music and meeting with friends.

Four of Nine Ss, say that they will never be subjects of such a kind of experiment in the future. Nevertheless nine of ten Ss find some meanings for their life in their participation to this experiment.

(3) Condition of SD may be also thought as social isolation. When the Ss have a habit to think alone, they can concentrate themselves on thinking without being disturbed by conditions of SD or social isolation. In our previous experiment (Kato et al. 1967), most of Ss reported that they could not concentrate on thinking in spite of their intention. At this time, seven of ten Ss say that they could think about something during the experiment. According to the results of interview about their inside life, on the average, — there seemed to be no conspicuous individual differences — they have four or five free hours, which they spend in reading, study, hobby or the rest. In these times, about 32 minutes are spent in such thinking alone as reflection on himself in the day, diary keeping or worship. They have about eight hours a week for reading. They read not only newspapers or magazines but also records of travels, current topics, novels, guidebooks for human life or religion. Thus our Ss seemed to have slight deviation in inside life compared with those of last experiment. The contents of their thinking under SD were, in most cases, the same as those in ordinary life, except one who conceived of a new idea for studying rocks.

Finally, we investigate each subject as a whole, considering these four data. First, time length and pattern of sleep, movements of body, frequency of sigh and yawn, and of urine observed during the confinement. Second, circumstances of experiment and physical conditions by his oral report. Third, frequency and time length of thinking shown in actogram. Finally, contents of thinking answered in questionnaires.

The results are as follows: (1) There are some individual differences of tolerance for

condition of SD including those of experimental room. (2) Ability of physical adjustment for experimental situation and ability of concentration on thinking may be not in proportion. (3) Physical condition suggested by behavior observation and those expressed by themselves do not correspond.

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ZUSAMMENFASSUNG

SELBST BILD: Wir haben mittelst des modifizierten Zwanzig-Darstellungen-Test (Twenty Statements Test) die Wirkungen der sensorischen Absetzung auf das in Präteritum beschriebene Selbstbild erforscht. Die hauptergenisse sind wie folgt: (1) Es wird Kerne Wirkung auf die Zahl der Beschreibungen gefunden. (2) Stufe der Zufriedenheit nähert sich bedeutsam zu "zufrieden". Die Selbstabschätzung gesellschaftlicher Notwendigkeit nähert sich bedeutsam zu "Notwendigkeit". (3) Beim Post-Test finden sich die der Kategorie "Aus" angehörigen noch öfter und die der Kategorie "In" angehörigen werden geringer.

P-F STUDIUM: Wir haben mittelst des Picture-Frustration Test einen Versuch gemacht, die Wirkungen der sensorischen Absetzung auf die Ich-Funktion wieder festzustellen und auch die Wirkungen derselben auf die Funktion des Über-Ich zu erforschen. Es finden sich kerne Wirkungen auf die Punktzahl von GCR. Was die Verschiebung der Erwiderng betrifft, ist die Verschiebung des N-P (Need-Persistence) Factor bedeutsam in der experimentalen Gruppe, und im Grade der verschiebung von Erwiderng werden die bedeutsamen Unterschiede bemerkt zwischen beiden Gruppen. Beim Verfahren, das in das jetzige Studium angenommen worden ist, werden keine Wirkungen auf die Situation des Über-Ich-Hindernisses beobachtet.

INTERVIEW: Es wurde versucht die Wirkung der Sinnlicher Entziehung (sensorischen Deprivation) auf das Bewusstsein der Versuchspersonen und die Beziehung zwischen ihrem inneren Leben und ihrer Ertraglichkeit gegen sinnlicher Entziehung. Es wurde dabei angedeutet, (1) dass die Haltung der Versuchspersonen zum Experiment und ihr Bewusstsein durch frühere Auskunft über das Experiment beeinflusst werden, und (2) dass die Ertraglichkeit der Versuchspersonen gegen sinnlicher Entziehung mit der Tendenz ihres Denkens in töglichem Leben verbunden zu sein scheint.

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