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著者	SATO ISAO
journal or publication title	Tohoku psychologica folia
volume	24
number	1-2
page range	18-23
year	1966-01-10
URL	http://hdl.handle.net/10097/00122629

STUDIES ON SENSORY DEPRIVATION: IV.

PART 5. CHANGES OF "SELF-CONCEPT" UNDER SENSORY DEPRIVATION*

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The changes of the "self-concept" under the sensory deprivation (SD) condition obtained from the "who am I" test were examined. The main findings are as follows: 1) The "past" tense description of the self-concept after SD decreased significantly. 2) The "Individual description — self evaluative" responses increased significantly after SD in the experimental group tested immediately after SD by oral method. 3) The decreasing tendency of the "Motivational description—constant" responses after SD were found in the experimental groups tested immediately after SD by oral method and about 2 hours after the end of SD by writing method. 4) The "Behavior description" responses after SD increased significantly in the experimental group tested after 2 hours the end of SD by writing method.

INTRODUCTION

In general it is said that a person regulates his real behavior in daily-life according to his "self-concept", which can be thought as an important component of his personality. And it may be true that some personality changes are expected to occur when there are appreciable changes in the person and/or in his environmental context. Really, as Haggard, E.A. (2) mentioned, from several previous studies it was found that significant changes in the environmental context such as "sensory deprivation" condition could affect marked personality changes. Now, what kind of self-concept have we to regulate our behaviour under the sensory deprivation condition? How does the self-concept differ under this specific situation from that under the daily life situation?

In this study, an attempt to clarify these problems was made. The author used the "who am I" test, a method developed by Kuhn, M.H. and McParten, T.S. (3), and Grossack, M.M. (1), to measure the "self-concept". For the purpose of demonstrating the change of the self-concept under the sensory deprivation condition, the changes of responses obtained from this test, which was to some degree improved by the author, were examined.

PROCEDURE

The experiments were carried out for three following groups.

In the first experimental group (E_1), the "who am I" test in oral method was ad-

* This experiment was carried out while the author was at Tohoku University.

ministered for 13 Ss before and immediately after the sensory deprivation (SD). Ss were asked to reply orally twenty answers to the question "who am I?" by way of the interphone. In the second experimental group (E_2), the "who am I" test in writing method was administered for 10 Ss before SD and about 2 hours after the end of SD. Ss were asked to write twenty answers to the question "who am I?" in twenty numbered blanks on a paper, choosing one of 3 tenses, "deshita" (was), "desu" (am), and "desho" (will or shall), (each tense means past, present and future respectively in Japanese), which have been printed in each blank. In addition, Ss were required to rate each of their descriptions using a 5-point scale varying from "very desirable" to "very undesirable" according to their estimation of self-concept in desirability. Each point means "very desirable" (5 step), "slightly desirable" (4 step), "uncertain" (3 step), "slightly undesirable" (2 step) and "very undesirable" (1 step) respectively. In the control group (C), the "who am I" test was administered for 11 Ss (at the intervals of 18 hours) in the same manner as in the second experimental without deprivation treatment.

RESULTS

A. Formal Analysis

In a formal analysis, the effect of SD on the alteration of the self-concept was examined by making a comparison between the results of E_2 group and controls (C) concerning two aspects, i.e., the "time-perspective" and "desirable-undesirable" scales.

(i) Time-Perspective Scale

The percentages for each tense chosen by Ss were computed for each test series (pre-and post tests) of both groups (E_2 and C). Table 1 shows the mean difference between

Table 1. The mean difference between percentages for each tense chosen by Ss in pre-and post test series

	Past		Present		Future	
	C	E_2	C	E_2	C	E_2
Mean	0.36	-0.50	-0.18	0.95	-0.18	-0.45
T test	P<0.05		N.S.		N.S.	

pre-and post-tests with respect to these percentages for each group. From this results, only as to the "past" tense choice the difference between E_2 group and controls (C) was statistically significant ($p < 0.05$, T test). That is, in the post-test of the experimental group, the "past" tense-choice of experimental group (E_2) was significantly decreased in comparison with that of the controls (C).

A tendency of increasing "present" tense choice after SD was found, as compared with the controls, but this tendency was not significant.

(ii) Desirable-Undesirable Scale

On the basis of five-point ratings mentioned above, the responses were classified

into three categories, i.e., “Desirable” (ratings in 5 and 4 step), “Neutral” (rating in 3 step) and “Undesirable” (ratings in 1 and 2 step). The percentages for each response classified into these categories were computed for each test series, and the mean difference between these percentages for pre-and post-tests are shown in Table 2. The

Table 2. The mean difference between percentages for the responses classified into three categories in pre-and post test series

	Undesirable		Neutral		Desirable	
	C	E ₂	C	E ₂	C	E ₂
Mean	-0.45	-0.95	-0.55	0.15	1.00	0.80
T test	<i>N.S.</i>		<i>N.S.</i>		<i>N.S.</i>	

E₂ group seemed to give fewer responses classified into the “undesirable” category than the controls, but this difference was not significant.

B. Content Analysis

In a content analysis, each response for the pre-and post test series in three groups (E₁, E₂ and C) was classified into eight categories described below. Some of these were derived from Kuhn’s categories and the rest were made by the author for this study.

1. Social description—general—(Sg)

The response classified into the category “Sg” is so-called “consensual”. That is, the description of “age”, “sex”, “occupation”, “reference group”, etc.

2. Social description—individual—(Si)

The response in the “Si” category implies the more private response in “consensual”.

Ex. “I shall marry for love in time”.

3. Individual description — idiosyncratic—(Ii)

This category means Kuhn’s “Idiosyncratic” one.

Ex. “I am 156 cm in height.”

4. Individual description—self evaluative—(Is)

This category means Kuhn’s “Self-evaluation”. That is, self-evaluative description of one’s own character, ability,

5. Motivational or emotional description—temporal—(Mt)

This category implies the description of one’s temporal, motivational or emotional state.

Ex. “I am hungry.”

6. Motivational or emotional description—constant—(Mc)

This category implies the motivational or emotional description of relatively constant one’s own state.

Ex. “I have a passion for angling.”

7. Behavioral description—temporal—(Bt)

The response in this category means the description of one's temporal behavior and experience.

Ex. "Now, I submit myself to this experiment."

8. Behavioral description—constant—(Bc)

This category implies the description of one's more constant behavior.

Ex. "I study political science."

Table 3 shows the mean difference between pre- and post tests for percentages of each response classified in these categories. The main findings are as follows:

Table 3. The mean difference between pre-and post test series for percentages of each response classified in eight categories

	Sg	Si	Ii	Is	Mt	Mc	Bt	Bc
C	-1.35	5.90	-0.45	-5.90†	0.00	5.00**	-3.60	0.45
E ₁	0.60	0.60	-0.30	6.90†*	6.00	-8.40	-3.20	-0.90
E ₂	0.00	2.00	-0.50	-9.00*	6.50	-5.50**	-1.00	7.50

The differences between each same mark were significant at 0.05 level of confidence by T test.

First, "Is" responses in E₁ group increased after than before SD, while for the controls these responses decreased in the retest at the intervals of 18 hours. This difference between E₁ group and controls (C) was statistically significant at 0.05 level of confidence (T test).

Secondly, E₂ group after SD showed a remarkably decreasing tendency of "Mc" responses in contrast with the increasing tendency for the retest of controls ($p < 0.05$, T test). Although not significant, for E₁ group "Mc" responses after SD were in line with this tendency of E₁ group.

Thirdly, it seemed to be interesting that there was an antagonistic relationship between "Is" responses after SD for E₁ and E₂ groups. That is, "Is" responses for E₁ group were increased after SD than before SD, while for E₂ group these responses after SD decreased. The difference between E₁ and E₂ groups was statistically significant at 0.05 level of confidence (T test).

Finally, getting together "Bc" and "Bt" responses in a main category "Behavior Description", the difference between E₂ group and controls (C) could be found significantly ($p < 0.05$, T test). That is, for the E₂ group the responses classified into the main category "Behavior description" ("BD") were increased after SD than before it in the opposite direction of the decreasing tendency in the retest of controls (C). On the other hand, E₁ group after SD indicated a decreasing "BD" response tendency as well as that for the retest of controls, and the opposite relationship between E₁ and E₂ was statistically significant ($p < 0.05$, T test).

DISCUSSION

1) So far as the comparison between E_2 group and controls is concerned, "past" description decreased significantly after SD. It was found that the self-concept of Ss after SD tended to concentrate into the "present" description away from "past" (or away from "future" in some cases), showing a slight decreasing tendency of "future" description and a fairly increasing tendency of "present" description after SD for E_1 group, although these tendencies were not significant. However, it is a question whether these results were directly affected or not by SD condition, because the post test of E_1 group was administered about 2 hours after the end of SD.

2) The "Mc" response after SD for both E_1 and E_2 groups took a decreasing course in contrast with the increasing tendency of controls. Especially, the difference between E_2 and controls was remarkable and statistically significant. The decreasing tendency of "Mc" responses after SD may suggest that Ss tended to reduce their interest or constant motivational attitudes toward something in the external world by the effect of SD. Further, it seems to mean the difference in the method of administration, oral method for E_1 group versus writing method for controls, that Ss of E_1 group after SD, which has been presumed to be more directly affected by SD condition than E_2 group, did not differ significantly from those of controls.

3) With regards to the "Is" response, an inverse relationship between E_1 and E_2 groups was found. The increasing "Is" response tendency of E_1 group after SD showed a statistical significance in contrast with the decreasing tendency of the controls. This result may suggest that Ss became more strongly aware of their own character and abilities by the direct effect of SD. On the other hand, it could be surmised to arise from the reduction of this direct effect of SD by the lapse of time after SD that for E_2 group these tendency could not be found.

4) Also concerning "Behavior Description" ("BD") response after SD, there was an inverse relationship between E_1 and E_2 groups. On this point it may be supposed as follows: the increasing "BD" response tendency of E_2 group after SD against the decreasing one of the controls in the retest might suggest that for E_2 group the description of self-concept would come to be more popularized or stereotyped and the tendency of simple description of behavior would be more increased by the lapse of time after SD with several other psychological testings rather than by the direct effect of SD. On the other hand, it could be due to the relative reduction of "BD" response arisen from the increase in "Is" response mentioned above, the fact that Ss of E_1 group after SD, which has been expected to be more directly affected by SD condition than E_2 group, showed a decreasing "BD" response tendency as well as controls did. Of course, these considerations are yet insufficient and remain to be closely examined.

A further study would be needed as to the interrelationship between the variable of the time elapsed after the sensory deprivation and the difference in the methods of administration of "who am I" test, that is, oral method and writing method.

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(Received Aug. 10, 1965)

ZUSAMMENFASSUNG

Die Veränderung des Selbst-Bildes (self-concept) unter der Bedingung der sinnlichen Entziehung wurde mit der Prüfung des "wer-bin-ich?" Testes (who-am-I test) versucht. Aus den Versuchsergebnissen folgt:

1) Der Fall des "Vergangenheit"-Beschreibens des Selbst-Bildes verminderte sich erkennbar nach der sinnliche Entziehung.

2) Das "individuelle (Selbst schätzen)"-Beschreiben vermehrte sich unmittelbar nach der sinnlichen Entziehung.

3) Das "Verhaltens"-Beschreiben vermehrte sich beinahe 2 Studnen nach der sinnlichen Entziehung.

4) Der Fall des "beständig-motivierend"-Beschreibens nach der sinnlichen Entziehung wurde sich vermindert.