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著者	Hariu Tohru
journal or publication title	Tohoku psychologica folia
volume	22
number	1-2
page range	51-55
year	1963-11-15
URL	<a href="http://hdl.handle.net/10097/00123725">http://hdl.handle.net/10097/00123725</a>

# THE CONCEPT ON THE PAST, PRESENT AND FUTURE OF THE SELF UNDER THE EFFECT OF INTRAVENOUS INJECTION OF PENTOBARBITAL CALCIUM\*

by

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About two decades have passed since it was proposed that all individual behaviors, which might appear to be odd and queer for other people, will be understood and predicted well, if we precisely understand the self concept of the person concerned and his surroundings (1). Along this line many experimental studies have appeared in the field of the clinical psychology and of the studies of personality.

We must pay attention not only to the self concepts of the present but also to those of the past and the future. As these concepts are assumed to have a projective character, they help us get a more precise understanding of the present self concept of the subject.

We have performed a series of experiments under the conditions which was seemed to reduce phenomenologically the control function of *the subjective self* or *the I* (2, 3, 4, 5).

This report is one of our experiments carried out to examine the effects of Pentobarbital Calcium (Ravona) injected intravenously, upon some psychological functions at the laboratory of psychology, Tohoku University. The concepts of the past, present and future of the self were examined.

## Method

Thirty pairs of descriptive polar terms (e.g. long-short, happy-unhappy), for evaluating equally the prospect of the past, present and future of the subjects were selected.

Corresponding to the present, the past and the future, three sheets of the test paper were presented, one after another. At the top of each sheet the following incomplete sentences were written;

With regard to past self: "My past state was ······" (Sheet 1)

With regard to present self: "My present state is ······" (Sheet 2)

With regard to future self: "My future state must be ·····"(Sheet 3)

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\* This research was performed in co-operation with Mr. Tetsuhiko KIKUCHI, Masahiro ŌYAMA (Dept. of Psychology, Tohoku Univ.) and Dr. Naoyoshi HASEGAWA and other research members of Dept. of Obst. and Gynec. Tohoku University (Prof. Katuji KUSHIMA) in performing medical procedure.

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The paired adjectives were rated on the seven-point scale by the verbal response of the subject. (Fig.1). In the experimental situation in which Ravonal was injected, it was difficult for the Ss to check on the scale with their own hand. Therefore all subjects were asked to evaluate verbally, while the experimenter checked on the scale corresponding to their responses. Before doing this experiment each subject was explained the meaning of seven points on the scale, i. e., the checkmark on the scale 0 means "I can not decide to prefer any sides of the paired adjectives", scale 1 means "a little inclined to either of two adjectives," scale 2 means "fairly . . . . . ." and scale 3 means "extremely . . . . .". Scalings were tried three times per each subject at intervals of a week.

Ss were divided into two groups; a experimental group consisting of seven Ss and a control group, consisting of six Ss. Both of them had three trials using the same procedure except Ravonal injection used only in the second test of the experimental group. Subjects of both experimental and control groups were all undergraduates of our psychological department.

As there was individual difference in the effect of the drug, in order to equate the mental state of the subjects the drug injection was stopped just before the subject fell asleep. The time when the subject's verbal expression became vague was judged as this critical point. The scalings of every subject finished within thirty minutes.

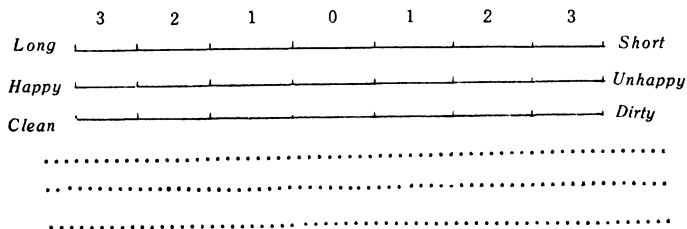


Fig. 1

## Results and Discussion

### 1) Direction of differentiation on the scales

Subjects showed extremely various types of differentiation of the scaling both in the experimental and in the control groups. So we could not find any general tendencies. This seems to mean that to each subject the concepts of his past, present and future are too private and unique to allow of simple generalization.

### 2) Reliability of the results with respect to each subject

Though there were remarkable individual differences in the directions of differentiation, in the same individual the directions of differentiations were very consistent and unchanged through three trials even under the condition in which the drug was injected. To inspect how many checkmarks on the scale moved from one side of the adjective pairs to the other side, we picked up the checkmarks which changed their directions when the first trial was compared with the

second, and with the third. It was found that both in the experimental and the control groups checkmarks which changed the direction from the mark 1 of one side to that of the other side showed only 0.7 to 1.2% of the total number of checkmarks. Those which changed the direction from further left than the mark 2 of one side to the other side were rare, i.e., 0.03% of the total checkmarks and yet these were found only in two subjects. From these results it may be said that though every subject has his unique concepts of the past, present and future self, with respect to each individual subject these concepts are considerably consistent and unchangeable even under the condition of Ravonal injection.

3) Distribution type of frequencies of the checkmarks on the scale

Fig. 2 shows the frequencies of the responded Ss checked on the scales. The figures in each scale are the summation of mean frequency of scalings on both sides. The first and third trials of the experimental group were performed without any drug injection. The distribution types of the frequencies in both trials were almost the same. Namely, scale 1 was most frequently checked and next was

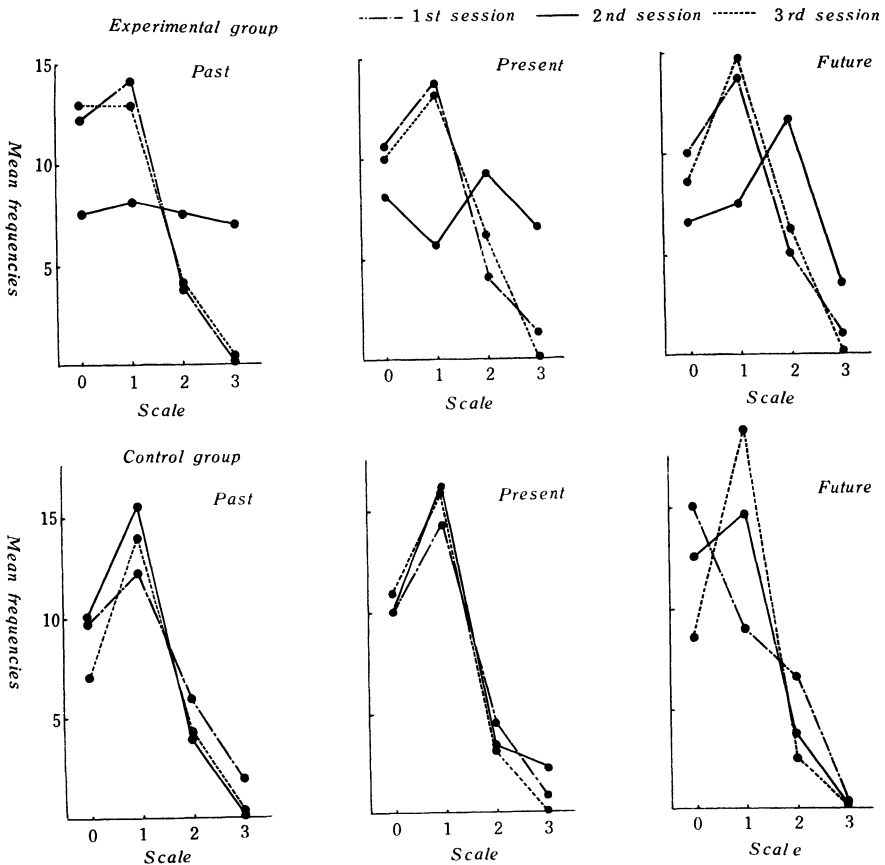


Fig. 2. Distribution type of frequencies of the checkmarks on the scale.

scale 0 but scale 2 was a few and scale 3 was near to zero. In the results of the control group the same tendency was found through three trials with a little variance in the case of the future concept. The future prospect seems to suggest a certain unstability of its concept as compared with those of the past self and the present self.

The result of the second trial of the experimental group who was given the drug, differed remarkably from the other trials as described above. That is, frequencies of the checkmarks on the scale 0 or 1 reduced, while those on the scale 2 or 3 increased. This means that subject's responses such as "I can not decide to prefer either one" or "a little . . . . ." decreased but those "fairly . . . ." or "extremely . . . . ." increased.

#### 4) Degree of inclination of subject's scaling to either end of the scale

In order to survey the extremity of subjects checkmark on a graphic scale, the following scoring was adopted. When scale 0 was checked zero score was given and when scale 1, 2 or 3 were checked, score 1, 2 or 3 were given respectively. Then the scores were summed up. Therefore with the increase of the score obtained rises the degree of inclination of subject's scaling to either end of the scale. Fig.3 shows the mean scores of all subjects. Scores of the second trial of the experimental group are high in comparison with those of the control group ( $p < 0.001$ ), while scores of first and third trials of the experimental group is almost the same as those of the control group which remained unchanged all through three trials.

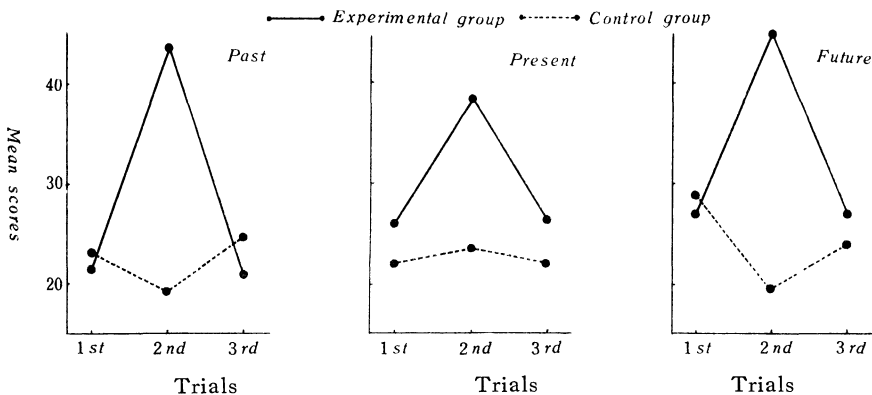


Fig.3. Degree of inclination of subject's scaling to either end of the scale.

#### Summary

1. The contents of the concept of the past, the present and the future of each subject showed remarkable varieties. However, with respect to an individual subject, his response tendency was highly consistent and reliable, being unchanged even under the condition of Pentobarbital Calcium intravenously injected.

2. The notable effect of the drug was observed as the tendency of rating towards high points on the evaluating scale, that is towards the more extreme degree of the rating than that under normal condition. It may be assumed that the conative function of the subject, controlling the free and immoderate expression of the emotional response are reduced by the drug.

3. Under both conditions, drug used and not used, the ratings of the future show somewhat different tendency, suggesting a specific structure of the future concept in comparison with those of the past and the present.

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## EERRATA

in this Journal, 1963, Tomus, xxi, Fasc. 4

In the article by A. Ono,

1. instead of *delayed* in the 27th line of p. 114 please read *undelayed* ;
2. instead of *undelayed* in the 28th line of p. 114 please read *delayed* ;
3. instead of *has effect* in the 36th line of p. 114 please read *has no effect* ;
4. instead of 1959 in the 8th line p. 115 please read 1960;
5. instead of *delayed* in the 2nd line from below of p. 115 please read *undelayed* ;
6. instead of *undelayed* in the last line of p. 115 please read *delayed* ;
7. instead of *retadée* in the 23rd line of p. 116 please read *immédiate* ;
8. instead of *immédiate* in the 23rd line of p. 116 please read *retardée*.