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EFFECT OF GENDER AND TYPE OF ENCODING ON RETENTION OF TRAITS

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The effects of self versus other's reference on retention of information were investigated in a series of two experiments using incidental learning paradigm. Experiment 1(n=30) involved a 2 (gender) X 3 (type of encoding) factorial design with repeated measure on the second factor. Retention was measured by free recall. Results clearly showed that both gender and type of encoding influenced recall. Females recalled larger amount of information than males. Recall of males was better than females under self-referent encoding, while females recalled better than males under other-referent encoding. Experiment 2 (n=30) also examined effects of gender and encoding context on the recognition of information instead of recall. A 2 (gender) X 3 (encoding context) ANOVA was employed. It was found that effect of encoding context was significant with superior recognition under self-referent encoding than other- referent and semantic encoding. However gender differences were not observed. Thus the present findings indicate that when information is encoded in reference to self, its retention is enhanced as found to be both in recall and recognition. Also, gender differences may influence self-reference effect. Thus "self" is a strong cognitive schema and may mediate and regulate ones behavior.

Research on self-reference effect (SRE) has gained much importance by the cognitive and social psychologists in recent past (Greenwald, 1981). Traditionally the role of self in memory was confined to its motivational and affective intentions, in the course of maintaining a positive self-image and defending one's ego. However researcher's now invest their effort more in revealing cognitive mechanisms and strategies.

A number of studies have clearly demonstrated that when information's encoded in context to the self verses other referent; the recall is better in case of self-referent encoding. The first hypothesis considered elaboration (Roger, Kuiper & Kirker, 1977) as a cause of enhanced retention under the self-reference encoding. The second hypotheses proposed organi zation (Klien & Kihlstrom, 1986; Klien & Loftus, 1988) as a mechanism responsible for SRE i.e. inter item linkage.

Singh (1995) examined the effect of self versus other references on retention of information, i.e. traits and behavioural statements in a series of four experiments under the incidental retention paradigm. The effects of arousal, affective state of the subject, valence of material on self versus other references were investigated. The results suggest the facilitative effect of self-reference on retention across different types of materials, tasks and affective states. However, the gender differences in context to recall of information's were inconclusive.

Research in the fields of self-perception, cognitive skills and personality has shown gender differences (Bem1974; Berry, 1976). Irvine and Berry (1988) noted frequent but not entirely sex differences favoring males in performance on tests that employ figural test items.

In line with the earlier research on gender and self concept, the present studies examined the effects of gender and type of encodings on retention of traits in a series of two experiments using within – group design.

Experiment - 1

This experiment examined the effects of gender and types of encoding (self- referent, other-referent, semantic) on recall of information. Bower & Gilligan (1979) reported better memory for events encoded in reference to self than when encoded in reference to another person. It was hypothesized that effect of self-referent encoding would be more in male then in females.

Method

Subjects

Thirty students (15 males and 15 females) studying in class X at Central School Bhopal participated in this study. Their average age was 16.5 years. They were tested individually.

Experimental Design

A 2(gender) X 3(types of encoding) factorial design with repeated measures on the second factor was used. Thus, there were six cells in the design with two gender groups, (male / female) and three types of encoding (self- referent / other-referent /semantic).

Materials

Three types of encoding tasks were used:

Self-referent task: It consisted of a list of 18 traits. (e.g. deep, rude, intelligent) The first and the last two traits were not considered for scoring to exclude the effects of primacy and recency effects.

Other-referent task: It also consisted of 18 traits (e.g. democratic, inefficient, tense).

Semantic task: The semantic task consisted of 18 statements (e.g. Is PEN related to ink) to be judged by the subjects from specific pieces of information. The first two and last two traits were not considered for scoring to exclude the effect of primacy and recency effect.

Distracter task: This task consisted of a single numerical task of 60 additions (sums) simply to control the role of rehearsal of the encoded material by the subject.

Retention Test: Retention of the encoded material was measured by the means of incidental free recall.

Procedure

The experiment consisted of three phases i.e. encoding, performance on a distracted task and incidental free recall. The three types of encoding were introduced with the help of specific orienting tasks. The order of the encoding tasks was counter balanced across subjects. For the self-referent task, subjects were instructed to indicate for each trait whether it described her/his personality or characteristic by circling “yes”/”no” on a response sheet. For the other-referent task, the subjects were instructed to indicate whether the particular trait described the personality or characteristic present in S.D. Sharma. In the semantic task they were asked to make a certain judgment about information given in statements. After the encoding phase, subjects worked on a distracted task to avoid possible effects of rehearsal. Finally, in the recall test the subjects were given 5 minutes to write down as many words as they could remember.

Results

A two way (gender X type of encoding) ANOVA with repeated measures on the second factor showed that the main effect of gender, $F(1, 28) = 5.16, p < 0.5$ was significant. The males recalled larger amount of information (M=4.10) than the females (M=3.75). The main effect of type of encoding was also significant, $F(2,56) = 6.45$; $p<.01$ with greater recall, under self-referent (M=4.63), than the other-referent (M=3.00) and semantic (M=4.15) encodings.

The two way interaction of gender and types of encoding was nonsignificant, $F(2,56) = 1.36$, $p>.05$). However, a close analysis of mean scores revealed that male subjects (M=5.20) recalled better than the females (M=4.06) under self-referent encoding while reverse was true for other-referent encoding i.e., females (M=3.20) recalling better than the males (M=2.80).

Experiment - 2

This experiment was planned to replicate the earlier experiment and investigated the effects of gender and type of encoding on a different measure of retention namely recognition instead of recall. Rogers, Rogers and Kuiper (1979) in a recognition memory study involving personal adjectives, reported that number of false alarms

was found to increase with degree of self- reference of the adjectives.

In the line with earlier findings, it was hypothesised that the effect of SRE would be more pronounced in context to recognition than the recall measure.

Method

Subjects

Thirty students (15 males and 15 females) studying in class X of Central school Bhopal participated in this study. Their average age was 16-20 years. They were also tested individually.

Experimental Design

A 2(gender) X 3(types of encoding) factorial design with repeated measures on the second factor was used. Two gender groups, (males / females) and three types of encoding (self- referent, other -referent, semantic) were employed.

Materials

Materials were same as in Experiment -1.

Distracter task: This task was similar to the one used in Experiment -1. The subjects were asked to do total of 60 Sums.

Retention Test: The incidental recognition test comprised of 108 words of which 54 were those which were used in three encoding tasks and 54 new words.

Procedure

The procedure of encoding and performance on the distracter task was similar to the Experiment-1. However, in the recognition test they had to listen a list of 108 words presented orally and indicate their responses on a response sheet.

Results

The two way ANOVA revealed that the main effect of gender was non- significant, F (1,28)=0.11, p>.05. A close perusal of mean scores revealed that females recognised almost equal number of information (M=9.28) than the males (M=9.13). The main effect of type of encoding was significant, F (2,56)=20.9 p<. 01 the subjects recognized greater amount of information under the self-referent (M=10.30) than other -referent (M=9.06) and semantic (M=8.26) encoding tasks. However two way interaction of the gender and encoding context was found to be non –significant, F (2,56)=0.40p>.05.

Discussion

The present study was formulated to understand the retention of information in relation to self and other references between male and female subjects following incidental retrieval paradigm. Specifically, two experiments were conducted. The incidental learning paradigm provides a methodological framework that enables memory study which approximates functioning of memory in natural setting rather then artificiality of laboratory and enables to assess retention in a more sensitive manner.

The results of experiment -1 clearly indicated gender differences in the recall of information i.e. males recalled better than the females. The males recalled larger number of traits than the females under self-referent encoding task. It appears that males are more concerned with their self and the" experience of self" as unique is greater among males than the females leading to higher recall than the female subjects,. While, the recall of females was higher than the males under other- referent encoding task. This might be due to fact that females are relatively more interdependent and differentiate themselves more from others to greater extent than males. Liking for group membership tends to be greater among females than males and also the need to be different from other is greater among females than males.

The effect of type of encoding on recall was also significant. The participants recalled greater amount of information i.e. traits under self-referent encoding than other- referent and semantic encoding. It appears that self as a rich cognitive scheme is responsible for the enhanced retention under self-referent encoding (Rogers, 1977).

The second experiment also examined the effect of gender and encoding context on recognition of information. The results indicated no differences on recognition measure among males and females. The effect of encoding context was significant. The subjects recognized greater amount of information under self-referent encoding than other- referent encoding.

The effect of type encoding on recognition was of greater degree than he recall measure. This is because of both recall and recognition involving different cognitive operations. In recognition, the subject must choose from among element present detecting which ones have already been encoding

and stored. Thus, one is attempting to determine if he or she has a copy of a currently present stimulus stored in memory. In recall, on the other hand these cues are not present and hence the person is responsible for generating his or her cues internally. Recognition is considered to be a more sensitive measure of retention than recall. (Peterson, 1967; Anderson & Bower, 1972).

Taking together the finding of experiment 1 & 2 it is suggested that retention of information is enhanced when encoded in context to self and gender differences may moderate the effect of self -reference on retention, however the basic character of self- reference remains intact. Thus, self -reference can be used an effective mnemonic device in particularly in classroom teaching learning processes. SRE can also be used as a tool in assessing the self-concept of patients of mental disorder and in their treatment.

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