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ABSTRACT

The affective attribute in free recall was investigated in relation to the order in which words are recalled. A factorial analysis was employed to determine the effect of certain emotionally arousing words on the recall of these words by black and white subjects. Both black and white experimenters were also employed to test a total of 48 subjects. The most important result was that black subjects held back affective words in free recall significantly more than white subjects. No contextual effect of the race of experimenter was found. The study shows the importance of the affective attribute in the order of free recall. (Author)

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Effects of Race of Subject and Experimenter on the Order of Free Recall of Affective Lists[1]

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A number of free recall studies have demonstrated a high correlation between probability of recall and order of recall (Marbe's Law). For example, items from the initial and terminal positions of the study list are generally recalled both more frequently and earlier (the primary and recency effects, respectively) than items from intermediate positions (Bousfield, Whitmarsh, and Esterson, 1958; Deese and Kaufman, 1957). In mixed lists, high frequency words tend to be recalled earlier than low frequency words (Bousfield, Cohen, and Silva, 1956). On the other hand, Battig, Allen, and Jensen (1965) presented evidence from three separate multiple trial free recall experiments that subjects tend to recall newly learned items prior to items that have been recalled correctly on previous trials (old items). Battig, et.al. findings have been supported by several studies (Battig and Slaybaugh, 1969; Steinmetz and Battig, 1969; Roberts, 1969). Such a subject strategy is inconsistent with the assumption that order of recall is an index of relative item strength (e.g., the spew-hypothesis).

Underwood (1969) has pointed out that some words are probably associated with certain affective responses which are nonverbal in makeup, even though words could be used to describe these generated

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responses. He hypothesized that a memory may consist, in part, of a nonverbal associative affective attribute. Furthermore, he stated evidence for hypothesizing a contextual attribute.

An extension of the priority effect hypothesis in terms of Underwood's attribute theory is possible. A number of factors, other than the associative strength of the item, are important in the memory process. Certain factors such as nonverbal associative cues (e.g., the affective attribute) are important in how the subject remembers certain items. Therefore, they should also be important in determining the order in which they happen to be recalled.

The present study was designed to investigate the influence of the affective attribute on memory. Specifically, the study attempted, using free recall lists, to answer the following questions:

1. Do the affective words in a free recall list influence the priority of newly learned items?
2. Do contextual cues (e.g., race of the experimenter) influence the priority of newly learned items?

It was expected that the degree of emotional arousal of the words would strongly affect the order in which they were recalled. The prediction was that highly emotional words would be suppressed and held back in recall. It was predicted that black subjects would hold back these words considerably more than white subjects. This should result because the words were selected to be mainly arousing to black subjects. In addition, the race of the experimenter should add to the emotional content of these words. It was expected that the words would induce a more emotional reaction when a white experimenter presented the lists to a black subject, than when a

black person was conducting the experiment. Hence, the affective words should be held back most significantly in the cross racial conditions.

Method

Subjects. The subjects were 24 black and 24 white sixth-grade students who participated in the experiment during school hours. The racial groups were equally divided by sex. Half of each racial group was presented the lists by a black, male experimenter and half by a white, male experimenter.

Materials. All of the subjects received four trials on two lists. Each list contained 20 two syllable nouns. The experimental list contained 10 affective words which had racial connotations and were considered to be more emotionally arousing to blacks than whites. These words were chosen from a list compiled for a study conducted in the black community of Chicago, dealing with the classification of words by their emotional content (Savage, 1969). The remaining words on that list were neutral in affectivity and had little associative value. These neutral words were all drawn from the Thorndike-Lorge frequency count. The control list contained 10 non-categorical neutral items similar to those of the experimental list. Since the affective words were categorical in nature, the control list was used to account for the effect of clustering on the order of recall.

Procedure and Design. The subjects were tested individually. Each child was allowed one minute in which to recall orally to the experimenter as many words as he could in any order in which they occurred to him. Half the subjects were given the affective lists first and the other half the control lists first. The order of the words on each trial presentation

was randomized. The subjects were randomly assigned to a black or white experimenter as they entered the laboratory. The lists were presented to the subjects orally by the experimenter at a two second rate. Each study trial was immediately followed by a one minute test of free recall. The interval between the end of the test trial and the beginning of the next study trial was 10 seconds for both groups.

A 2 X 2 analysis of variance (Subject race X Experimental race) was employed with the priority score for the affective words minus the score for the group words as the dependent variable.

Results

The order of recall of the words was analyzed by two methods. In one, a recall rank score was computed for each word by assigning positive values to all words recalled before the median and negative values after the median. The recall rank scores were computed separately for the affective, group, and neutral words.

The initial analysis was designed to determine if there were sex differences in holding back affective words. No sex differences were found in the order of recall on either the affective, group, or neutral words. Therefore, the male and female subjects were pooled for the major analyses.

A significant difference between black and white subjects was observed ($F = 4.26$, $df = 1/40$, $p < .05$) in an analysis of variance with the difference between the rank order of affective minus group words as the dependent variable. Blacks held back the affective words more than whites. However, the main effect for the race of experimenter was not significant ($F = 1.42$, $df = 1/40$, $p < .25$). The interaction between the race of the experimenter

and the race of student also did not reach significance ($F < 1.00$).

Discussion

The emotional content of the affective words was a factor in causing both black and white students to hold back these words in recall. This was shown by the negative mean priority scores for both groups. However, this holding back of affective words was significantly more apparent for blacks than whites. This was anticipated, since the words were designed to be more emotional for blacks than whites. Apparently, the affective attribute of words is an important factor in the order of free recall.

The race of the experimenter was not important in determining the order of recall. Blacks held back the affective words just as much with the black experimenter as they did with the white experimenter. Apparently, they felt just as uncomfortable in saying these words to an experimenter of their own race as to a white experimenter. Therefore, the experimenter in this situation cannot be considered a significant contextual cue.

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