

The effect of instructions to forget on proactive inhibition

MARIA REGINA COCCIA and DELOS D. WICKENS
Ohio State University, Columbus, Ohio 43210

By using the Peterson and Peterson technique, the effect of instructions to forget on proactive inhibition was assessed. The experimental group was instructed prior to testing to "forget items after they are recalled." The control group was not given the "forget" instructions. The results indicated no significant difference between experimental and control group on the average number of items recalled. It is hypothesized that active erasure is not possible.

Bjork, LaBerge, and LeGrand (1968) demonstrated that forgetting due to interference can be decreased by instructing subjects to forget those items which he will not be asked to recall. The subjects were presented with 48 lists on a memory drum and the cue to forget was colored dots. Bjork (1970) also showed that proactive interference produced by associative interference can be reduced by giving "instructions to forget." The subjects were presented with lists of paired associates, and at the end of each list they were given a test item from the above list. Prior to testing, the subjects were instructed that, if a color change occurred within a list, they were to forget the items given on the first color. Bjork performed a second experiment in order to assess whether the reduction in proactive interference was due to the color shift or to the "instructions to forget." In this study the subjects were told prior to testing that the color change had no significance. The results showed the "color shift" itself did not cause a reduction in proactive interference. Thus, the results of Bjork's first experiment (1970) were due to the "instructions to forget." Turvey and Wittlinger (1969) found that the instructions "need not remember" produced significant reduction in proactive interference. They used the classical Peterson and Peterson technique. Prior to testing, the subjects were instructed that, if a trigram appeared on a red background as opposed to a green background, they "need not remember" the items. A control group was set up in which the subjects were told that a color change had no significance. Weiner and Reed (1969) found that instructions to forget reduce the percentage recall, while remember instructions increased the percentage recall for the same test item. They explained this by stating that instructions to forget affect one's motivation in the retrieval process. Elmes (1969) demonstrated, using a running paired associate task, that cueing to forget items presented prior to a critical item—the test item—produced better percentage recall of that item

than the control group in which no cue to forget was given.

The present experiment proposes to study the effect of verbal instructions to "forget items after they are recalled" given prior to testing upon proactive inhibition, as studied by the Peterson and Peterson technique. It has typically been shown that recall of items in the Peterson and Peterson design decreases across trials due to proactive inhibition (Keppel & Underwood, 1962; Loess, 1967; Murdock, 1961; Wickens, 1970). The goal of this experiment is to determine whether these instructions can effectively reduce the amount of response decrement.

METHOD

Subjects

The subjects were Ohio State University students enrolled in Psychology 100 classes. A total of 130 subjects were tested.

Apparatus

The subjects were tested in a cubicle. The triads used were taken from *Computational Analysis of Present-Day American English* by Kucera and Francis. A carousel slide projector was used for presentation of all items—asterisks, trigrams, three-digit numbers, and question marks. An automatic tape timer spaced the presentation rate of slides and controlled the carousel slide projector. A metronome which was used during the distractor task was set at a pace of 60 beats/min.

Procedure

A pilot study was conducted in which 66 subjects were presented with four trials each. The experiment proper consisted of an experimental and a control group, with 32 subjects in each group. Eight trials instead of four were given to each subject. The technique used was the classical Peterson and Peterson paradigm. An asterisk appeared for 1 sec as the ready signal for the beginning of each trial. This was followed by a triad which was shown for 1½ sec. A three-digit number appeared and remained projected for 18 sec. During this time the subject counted backward by threes from the number to the beat of the metronome until a question mark appeared, at which time the subjects were to try to recall the three words. The question mark lasted for 9 sec. The subjects were instructed prior to testing concerning the sequence of events. They were not told the true purpose of the experiment. Instead they were told that the experiment tested their ability to perform

The first author wishes to dedicate this work to her father, Emilio Coccia.

a mathematics task and to recall words without having rehearsed them. In addition, the experimental group was told to "forget" a set of words once they were recalled or once the retrieval cue had been given, i.e., they were instructed to forget the words from the previous trial whether or not all of them were recalled. The control group was not given the "forget" instructions.

The slides were randomly ordered and the subjects were randomly tested according to each group, i.e., we controlled for position by randomly assigning subjects at each session to either the control or experimental group.

RESULTS

Figure 1 is a graph representing the average number of items recalled for each trial for each of the two groups. An analysis of variance was done and a significant Trials effect was found with $F(7,434) = 17.69$, $p < .01$. However, the Groups effect was nonsignificant ($F = .117$, $df = 1/62$), as was the Group by Trials interaction ($F = .423$, $df = 7/434$).

DISCUSSION

Bjork stated that he was able to reduce proactive inhibition due to differential rehearsal and differential grouping, and the differential grouping affected retrieval process. However, the design used in this experiment specifically prevented rehearsal from occurring. Also, the Peterson and Peterson technique, which Bjork did not use, apparently does not allow for differential grouping to affect the retrieval process.

Turvey and Wittlinger suggested that they were able to reduce proactive inhibition due to differential grouping affecting trace formation, i.e., weaker traces can be formed for those items which the subjects need not remember, thereby reducing interference from those items. The present design, however, demanded that traces of equal strengths be formed on each trial. This may prohibit differential grouping from affecting trace formation due to the fact that subjects were requested to recall as many of the items as possible during the recall.

The results of this experiment do suggest that active erasure mentioned by Bjork is not possible, at least with this design. In this experiment the instructions to forget were given verbally only once at the beginning of each session prior to any testing. There exists, then, the distinct possibility that these verbal instructions to forget do not provide a strong enough cue for the subjects. In most of the other studies, visual or auditory forget cues were provided.

Finally, it is to be noted that other studies, such as Bjork et al. (1968), Bjork (1970), and Elmes (1970), did not involve proactive inhibition using the Peterson and Peterson technique, but rather lists of paired associates. Many times results obtained in any experiment are task specific and generalizations made to other tasks may not be possible. The proactive inhibition studies as studied by the Peterson and Peterson technique is a unique design in and of itself.

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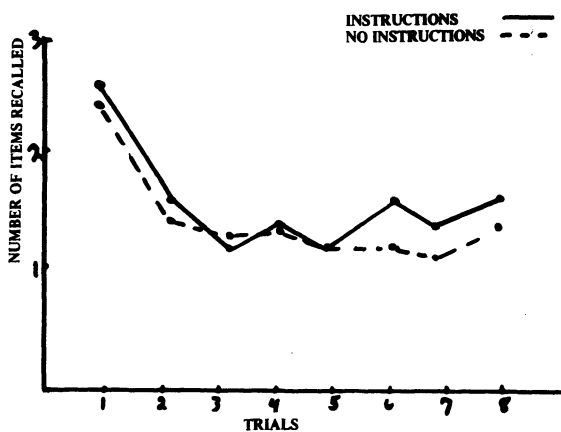


Figure 1. Mean number recalled by groups by trials.

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