Positive forgetting of sentence material*

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This experiment investigated the positive-forgetting phenomenon with sentence material. Sets of sentences were presented to Ss with each sentence being cued "remember" or "forget" immediately following its presentation. To-be-remembered (TBR) sentences were found to be more accessible than to-be-forgotten (TBF) sentences and uncued control sentences. Sentence connectedness was found to be an important determiner of the magnitude of the observed recall phenomenon; but differential sentence interest was not a significant factor. Using a multiple-choice recognition test, key words or phrases from the to-be-forgotten sentences were found to be equally available as key words or phrases from the to-be-remembered sentences. These results warrant an extension of Bjork's (1970, 1972) selective-rehearsal and differential-grouping interpretation of the positive-forgetting phenomenon to encompass sentence material. Some implications of the findings for single-presentation information acquisition were noted.

Bjork (1970) has suggested that part of the reason why people complain about "bad" memories may be because they have insufficient or inefficient forgetting mechanisms. What constitutes an insufficient or inefficient forgetting mechanism is a perplexing question. It is not at all obvious that an inefficient forgetting mechanism is one that fails to invoke a total erasure of irrelevant material. Bjork (1970, 1972) has presented one theory of how we might keep our memories current based on studies involving the intentional remembering and forgetting of words in a list (Woodward & Bjork, 1971) and CVC-word pair associations (Bjork, 1970). Thus far, however, a test of Bjork's theory with sentence materials and ultimately with more connected discourse has been absent from the literature. Many studies using various forms of connected discourse as stimulus materials have failed to produce the significant interference effects predicted from traditional proactive and retroactive interference paradigms (Cunningham, 1972).

The present experiment was designed in an attempt to extend Bjork's theory to include sentence material. Bjork's theory states that upon the presentation of a forget instruction, a S ceases to rehearse the previously presented, to-be-forgotten (TBF) items and devotes all of his rehearsal efforts to the subsequently presented to-be-remembered (TBR) items. The TBR items are "set apart" in a group in memory which is functionally distinct from the TBF item group. The effectiveness of the forget instruction is said to vary with the degree to which the experimental procedure permits selective rehearsal and differential grouping of the TBR items. Reitman, Malin, Bjork, and Higman (1973) reported that the negative effect of a cue to forget on TBF item recall is accompanied by an approximately equal positive effect on TBR item recall. This relation was determined

by comparing the recall of items in a list when a forget signal was given vs the recall of items in comparable lists when no forget cue was present.

All of the investigations of the positive-forgetting phenomenon known to the author have employed single words and/or nonsense syllables for stimulus materials. It was not clear whether a release from interference via a cue to forget is possible with more complex sentence materials; but it was hypothesized that at least two variables may affect the magnitude of the phenomenon if it did occur. These variables are: (1) the degree of orderliness, or connectedness of the sentences within a passage, and (2) the extent to which the Ss find the sentences of a passage interesting. If the sentences of a passage are highly connected, the probability of maintaining a selective rehearsal of the TBR sentences should be low. This hypothesis follows from Bjork's contention that the magnitude of the phenomenon is partly a function of the degree to which the experimental procedure permits differential grouping of the TBR items from the TBF items in memory. The extent to which the sentence material invites differential grouping may also be an important factor. The connectedness of a group of sentences can be assessed by obtaining a coefficient of concordance or Kendall's W (Kirk, 1968) from a group of judges. To the extent that the judges agree on some specific "good" order of the sentences of a passage, the sentences may be said to be orderly or connected.

A high coefficient of concordance implies a logical flow of sentence content within a passage. This does not mean that one sentence necessarily elicits another without its presentation. A low coefficient implies that the sentence contents within a passage are independent of any logical flow, but not necessarily independent with respect to topic. Thus, a passage which is unconnected in the present context is not necessarily composed of unrelated sentences.

If the sentences of a passage generate differential interest, it may be more difficult for the E to control the

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positive forgetting of the more interesting TBF-cued sentences. Sentences eliciting greater interest may gain selective rehearsal. Differential interest generated among the sentences of passages can be evaluated by having a group of judges rank-order the sentences of the passages on the basis of interest. A blocked input-cueing procedure might aid the Ss to keep the two sets of sentences separate in memory (Bjork, 1970; Elms & Wilkinson, 1971), and the differential grouping of the input should increase the opportunity for selective rehearsal of TBR sentences. However, the S's ability to compartmentalize TBR from TBF items successfully has been found with an unblocked input-cueing procedure as well (Bjork & Woodward, 1973; Davis & Okada, 1971; Woodward & Bjork, 1971). The present study employed the unblocked immediate-cueing procedure of Woodward and Bjork (1971). It was hypothesized that in the present context, the Ss might actively "level" or "sharpen" (Bartlett, 1932) the sentences of a passage for purposes of a more efficient selective-rehearsal strategy. The Ss would then reconstruct the sentences at recall from the reduced forms. Therefore, the present recall data were scored by two judges on the basis of substance rather than verbatimness (Cunningham, 1972). James, Thompson, and Baldwin (1973) offer a brief review of studies dealing with the storage and retrieval (reconstruction) processes of sentence memory.

Aside from the free recall test, two other tests of sentence retention were of interest, both involving the cloze or deletion procedure (Taylor, 1953). The first was sentence completion for substantive key words or phrases and the second was a modified cloze form using multiple-choice items for recognition of the missing substantive key words or phrases from the sentences. The key words or phrases of each sentence were determined by a group of judges. A surprise sentence-completion test can be viewed as prompted recall of the sentence substances. It has been suggested that in some instances, the positive-forgetting phenomenon is mainly a matter of differential accessibility rather than a matter of differential availability (Bjork, 1972). Therefore, it may be possible to enhance the accessibility of the key words from the TBF-cued sentences by providing the Ss with the sentence contexts as prompts. Woodward and Bjork (1971) found that Ss could use recalled TBR words to retrieve TBF words of the same category. A surprise recognition test using multiple-choice items as possible fill-ins for deleted words can be used to determine whether or not any positive-forgetting phenomenon observed with respect to sentence materials is a function of retrieval processes alone or retrieval and storage processes taken together. Bjork (1972) suggested that storage of TBF items in long-term store may not be affected by selective rehearsal of TBR items with a blocked input-cueing procedure. An unblocked input-cueing procedure may be conducive to an unavailability of the TBF sentence substances through

the selective rehearsal of TBR sentences, with TBF sentences having a lesser probability than TBR sentences of getting transferred to long-term store (Bjork, 1972; Davis & Okada, 1971). Since the present study utilized an immediate-cueing procedure, it was predicted that recognition for missing key words in a sentence would be lower for the TBF sentences.

In light of the Reitman et al finding of an approximate equality of positive and negative effects of a cue to forget, it was also predicted that TBR sentences would be recalled better from passages with remember and forget signals present than from passages with no signals present. The reverse should hold for the TBF sentences.

METHOD

Subjects

The Ss were 120 undergraduates from various psychology courses at Ohio University who volunteered to serve in a psychology experiment for course credit.

Materials and Apparatus

Three sets of 10 sentences each were constructed with the following specifications in mind. Each passage was to have one central theme. Each sentence of each set was to be of relatively equal length and was to represent a different "idea" with respect to the central theme. The latter specification was desired to minimize the overlap of information among the sentences. The connectedness of the sentences of each passage was determined by having six judges rank-order the sentences in their "best" possible order. A coefficient of concordance or Kendall's W was then computed for each passage. Each of the three passages follows, with their sentences arranged in the "best" possible orders as determined by the judges. Passage No. 1 was about homemade winemaking. Kendall's W was found to be significant with $W = .55$, $p < .01$.

"Wine has long been known to benefit health by aiding in the digestion process. Grapes carry the greatest number of wine-yeast cells which are receptive to fermentation. Wine can be made from flowers as well as from fruits and vegetables. Dried fruit swells up and starts making alcohol for wine very rapidly. When the temperature of wine mash goes down, the rate of fermentation is slowed up. To produce a clear bottle of wine, one can add eggshells as particle collection agencies. Adding a drop of glycerin to wine gives it a rich body. Homemade wine can be fortified by adding a little brandy. Inserting toast in a wine mixture provides a pleasant tint to the wine. 'Heat' can be added to wine by adding peppercorns to any wine mixture."

Passage No. 2 was about behavior modification techniques on how to quit smoking. Kendall's W was found to be .27, which is marginally significant at the $p < .09$ level.

"Maintain a record of your cigarette intake for each day. Store all cigarettes to be smoked in the attic. Put time locks on all household cigarette cases. Make a large bet with your friend. Imagine that you are slowly dying while smoking. Pretend that you are a non-smoker. Continue to tell yourself that you just finished a cigarette. Repeatedly tell yourself that you are the master of your own fate. Spend a lot of time in no-smoking areas. Buy a wanted gift with the money saved from reducing smoking."

Passage No. 3 was about a south-sea island called Flamoia. Kendall's W was found to be significant with $W = .46$, $p < .01$.

"Flamoia is lined with beaches of red sand. A vast volcano is located near the center of Flamoia. Flamoia is totally flooded with water once every month. The chief foodstuff on Flamoia is the bark of the Bajou tree. Flamoians do not eat any meat

whatsoever. Most Flamoan homes are built near one of the many free-flowing wells. The life expectancy is greater in Flamoan than in most countries. Flamoan couples are by religion limited to one child. Flamoans have had little contact with motor vehicles. Flamoans share the common belief that airplanes are Gods."

The three passages represent a rough continuum with respect to the orderliness of their sentences. This makes it possible to test the hypothesis that sentence connectedness, as defined earlier, decreases the effects of a cue to forget. The Ss may find it more difficult to keep the TBR-cued sentences separate in memory from the TBF-cued sentences for purposes of selective rehearsal. The six judges were also asked to rank-order the three passages and each of the 10 sentences within each passage on the basis of interest. The Friedman chi-square (Kirk, 1968) was nonsignificant with respect to the overall interest of the three passages with $\chi^2(2) = 0.33$, $p > .80$. Sentence interest was significant within each passage, however, with chi-squares ($df = 9$) of 22.74, $p < .01$; 17.62, $p < .05$; and 21.83, $p < .01$, for the three passages, respectively. The six judges were then asked to underline one word or phrase in each sentence in each passage which they felt was the "key" word or phrase in each sentence. The most frequently underlined word or phrase for each sentence was removed from the sentences for the multiple-choice and sentence-completion test forms. A slide was made of each sentence of each passage, and a slide with either an "R" or an "F" on it was shown following each sentence. The slides were shown via a Kodak Carousel projector controlled by three timers. One timer controlled the sentence presentation time, one controlled the cue presentation time, and one controlled a postinput cue rehearsal interval. Three sets of biographical questions were constructed for purposes of a sentence-like interpolated task. Each set of questions took approximately 45 sec to answer.

Procedure

All Ss were shown all three passages (three trials). The order of passage presentation was randomized over sessions with five different Ss participating per session. All data for the analyses were collected from the last passage shown in each session. All Ss expected a free recall test for the R-cued sentences on each of the three trials. The Ss were told, "I am investigating the possibility that allowing people to forget certain portions of a prose passage will aid them in remembering the rest of the passage. You will be shown a series of different sentences, one after the other, on the screen at the front of the room. Immediately after the presentation of each sentence, an 'R' or an 'F' will appear on the screen. If the letter which appears is an 'R,' that means that later on, you will be asked to recall the substance of the sentence that has just been presented. If the letter which appears is an 'F,' that means that you will not be asked to recall the sentence that has just been presented. The 'F' essentially means forget. Only the 'R'-cued sentences will be scored as correct so there is no reason for you to remember the 'F'-cued sentences. They are irrelevant to you and will not be scored at all. However, there are no points removed if an 'F'-cued sentence is recalled." The last sentence of the above instructions was included to avoid giving any postinput importance to the TBF-cued sentences.

Just prior to the presentation of each passage, the E gave the Ss a one-sentence description of the theme of the passage. After that, each sentence was shown for 5 sec, each being followed by a postinput cue for 1 sec, with each cue being followed in turn by a 5-sec empty rehearsal interval. The rehearsal interval was included to provide an opportunity for selective rehearsal and organization of TBR sentences. Half of the sentences from each passage were cued "R" and half were cued "F." The only restriction placed upon the order of R and F cues was that neither cue could appear three times in a row. As a counterbalancing measure, each sentence appeared as a TBR and as a TBF sentence to an equal number of groups of five Ss. The sentences themselves always appeared in the same order for all Ss

as they were ranked by the judges. One set of biographical questions was answered by each S immediately after each passage presentation. Each S was required to wait for 45 sec before test, during which time all of the biographical questions were answered. The Ss were given 3 min to complete the subsequent test.

All Ss were tested for free recall of the R-cued sentences on the first two trials. Six groups of five Ss each were tested for overall (recall everything) cued free recall on the last trial, two groups per passage. The Ss were told following the last passage presentation and interpolated task, "This time, write down the substance of any and all of the sentences from the last set that you can remember. This includes both the 'R' and 'F'-cued sentences. If you can recall any of the 'F'-cued sentences, do so. They will also be scored as correct this time only."

Six other groups of five Ss each were given a surprise sentence-completion test on the last trial. The Ss were told following the last passage presentation and interpolated task, "This time you will find a set of sentence-completion items. Please fill in all of the blanks as best you can. Try to get the main substance of what was in the blank. Both the 'R' and the 'F'-cued sentences appear here. Put something in all of the blanks."

Six other groups of five Ss each were given a surprise multiple-choice test after the last passage presentation and interpolated task. The Ss were told, "This time you will find a set of multiple-choice items. Please circle the letter before the words which go in each of the blanks. Both the 'R' and 'F'-cued sentences appear on this page. Circle the letter for your choice of fill-in words for each of the sentences."

The multiple-choice test had four alternatives, with the correct response appearing verbatim. Intrusions given by the group of Ss who were given the sentence-completion test were used as the distractors in the multiple-choice test. Thus, the testing context was held constant across the two tests. Bernbach (1967) and Bernbach and Kupchak (1972) have emphasized the importance of maintaining similar test contexts across different test modes. Six subgroups of five Ss each comprising the control group were shown all three passages with no cues presented following the offset of each sentence. The Ss were shown each sentence for 5 sec, each followed by a 5-sec rehearsal period. A free recall test was administered following each of the passage presentations and biographical-question interpolated tasks.

Design

The data matrix collapsed over Ss within conditions was a 3 by 4 by 2. The factors were passage, test type (cued free recall; uncued control free recall; multiple-choice recognition; sentence completion), and sentence type (TBR, TBF). The value of uncued free recall retention for each S in that condition, divided by two, was entered under both item types. Interjudge reliabilities were obtained for the sentence-completion, cued free recall, and uncued control free recall conditions. The average of the two sets of judge scores for each S was used in the subsequent analysis of variance.

RESULTS

The interjudge reliabilities were .95, .98, and 1.00 for the uncued free recall, cued free recall, and sentence-completion conditions, respectively. The analysis of variance showed a significant passage effect [$F(2,108) = 17.96$, $p < .001$, $MS_e = 1.00$], test type effect [$F(3,108) = 48.91$, $p < .001$, $MS_e = 1.00$], sentence type effect [$F(1,108) = 48.91$, $p < .001$, $MS_e = 0.47$], and a Test Type by Sentence Type interaction effect [$F(3,108) = 18.42$, $p < .001$, $MS_e = 0.47$]. Posttests using Tukey's HSD procedure (Kirk, 1968)

Table 1
Probability of Sentence Retention as a Function
of Sentence Type and Type of Test

Sentence Type	Test Type			
	Free Recall (Cued)	Free Recall (Control)	Sentence Completion	Multiple Choice
TBR	.74	.57	.87	.95
TBF	.40	—	.75	.92

showed that overall sentence retention from Passage No. 1 was significantly lower than sentence retention from Passages 2 and 3 ($p < .01$). If mean sentence length is taken as a measure of passage difficulty, difficulty is negatively correlated with uncued control free recall and overall cued free recall (TBR + TBF). Overall retention as measured by either of the two free recall tests was significantly worse than retention as measured by either the sentence-completion test or the multiple-choice test, with all $ps < .01$. The multiple-choice recognition measure of overall retention just missed significance over the sentence-completion measure of overall sentence retention at the $p < .05$ level. A Cicchetti test (Cicchetti, 1972) was conducted on the Test Type by Sentence Type interaction effect. Sentence retention as measured by the sentence-completion test, and the cued free recall test was significantly better for the TBR sentences than for the TBF sentences, with both $ps < .01$. No significant sentence type differences were found with respect to the multiple-choice test condition or, of course, the uncued control free recall test condition. The TBR sentences were recalled significantly better under the cued free recall test condition than under the uncued control free recall condition ($p < .01$). The reverse was true for the TBF sentences ($p < .01$). The probability of sentence retention as a function of sentence type and type of test is shown in Table 1.

With respect to the prediction that sentence connectedness makes the observance of the positive-forgetting phenomenon difficult, it was found that TBR-cued sentences of the passages received less free recall facilitation over their uncued control equivalents with greater connectedness of the sentences within the passages. Also, TBF-cued sentences tended to receive a smaller free recall decrement from that of their uncued control equivalents with greater connectedness of the sentences within the passages. Table 2 shows the percentage increase or decrease in sentence free recall due to the postinput cuing as a function of sentence connectedness. The relationship between passage sentence connectedness and the magnitude of the positive-forgetting phenomenon may seem unconvincing, since the magnitude of the phenomenon is essentially the same for Passages 1 and 3. Therefore, Passage No. 1 was presented to 20 new Ss on the third trial, 10 of whom received cues and 10 of whom were control Ss. This time the sentences were randomized with respect to presentation position instead of being presented in their

"best" possible order. The destruction of the existing, significant orderly flow of sentence ideas within Passage 1 should increase the observed magnitude of the phenomenon. This is indeed the case. The overall free recall of the 10 sentences of Passage 1 decreased by 4% and the magnitude of the phenomenon increased by approximately 43%, from an average of 13% to an average of 56%. The latter result was significant with $t(18) = 2.91, p < .01$.

It was also observed that on Trial 2, TBR sentence recall for each passage was comparable to that on Trial 3 (recall everything); but TBF sentence recall on Trial 2 was consistently less than on Trial 3. Under the present instructions, writing down TBF sentences on Trial 2 is wasted effort only if the S is certain that they are TBF sentences. The proportion of the accessible TBF sentences (as taken from Trial 3) which were comparably suppressed on Trial 2 is an inverse function of the sentence connectedness measure. These proportions are .07, .12, and .31 for Passages 1, 3, and 2, respectively. Not only is it harder for the Ss to group the TBR sentences differentially for selective rehearsal with greater sentence connectedness, but it is also more difficult for the Ss to determine the nature of the accessible TBF sentences. This means more intrusions on Trial 2 with greater sentence connectedness in relation to the comparable number of accessible TBF sentences (Trial 3). It should not be implied that suppression is a potent factor on Trial 2, however. Suppression at its greatest (.31) only amounts to about one-half of a sentence. Nevertheless, this finding offers more evidence for a fallible differential-grouping mechanism which becomes more fallible with greater sentence connectedness.

With respect to the hypothesis that differential sentence interest may be a factor in determining whether or not a sentence is "positively forgotten," the correlation between the judges' sentence-interest ranks and the probabilities of uncued control sentence recall was significant, with $r = +.38, t(28) = 2.18, p < .05$. The correlation between the judges' sentence-interest ranks and the probabilities of cued TBR sentence recall was $+.04$, and was $+.07$ for cued TBF sentence recall. Neither of the latter correlations was significant. Differential sentence interest was not a factor in determining whether or not a sentence is positively forgotten or selectively remembered.

Table 2
Percentage Increase or Decrease in Sentence Free Recall Due to
Postinput Cuing as a Function of Sentence Connectedness

Sentence Type		Passage		
		1	3	2
		Coefficient of Concordance		
		.55	.46	.27
TBR	(Percent Increase)	12	14	25
TBF	(Percent Decrease)	14	14	23

DISCUSSION

In the present context, the scope of Bjork's theory of intentional forgetting (Bjork, 1970, 1972) can be extended to include sentence material. Two lines of evidence point to a selective-rehearsal interpretation of the free recall results. First, the increase in accessibility for cued TBR sentences over that for uncued control sentences is exactly equal to the decrease in accessibility for cued TBF sentences. Reitman et al (1973) obtained a similar result with lists of paired associates. Secondly, the hypothesized reduction of the sentences for a more efficient selective rehearsal was reported to occur. Postexperimental interviews revealed that the Ss were indeed reducing the sentences to two- or even one-word forms, such as "heat-peppercorns" and "digestion." At recall, these reduced forms were used to reconstruct the original sentence substances. The 5-sec rehearsal intervals which followed both the R and F cues were reportedly used to "silently repeat" or "recycle" the reduced forms of the TBR sentences. Nevertheless, it may be argued that output interference is responsible for the decrease in TBF sentence recall. This argument appeared reasonable, since the mean output position for TBR sentences was 2.10 while it was 4.45 for the TBF sentences. Therefore, 30 more Ss were run through the cued free recall condition, 10 Ss per passage. This time, the Ss were told following last-passage presentation to recall first all of the TBF sentences that they could remember before recalling any of the TBR sentences. The probability of free recall of the TBF sentences was identical under the modified cued free recall condition to that of the original cued free recall condition. The probability of TBF sentence recall was once again .40. The probability of TBR sentence recall was slightly less (.71) under the modified cued free recall condition, with only a 3% decrease from that of the original cued free recall condition. This difference was not significant. The TBF sentences are accessible from long-term store to a certain extent at test, and this accessibility is not diminished by the order of the sentence output. This finding may be due in part to the selective-rehearsal process being fallible, i.e., some reduced forms of some TBF sentences get caught up in the selective-rehearsal cycle. The TBR-TBF sentence-sorting process may be nonoptimal, and, in light of the sentence-connectedness finding, the sentence-sorting process appears to become less nearly optimal with greater sentence connectedness. The differential grouping of TBR from TBF items as well as their selective rehearsal is a memory process which is necessary for the positive-forgetting phenomenon to occur (Bjork, 1970, 1972).

If the present sentence-sorting process is equated with an idea-sorting process, then the degree of logical flow of a string of encountered ideas is an important variable which lowers our immediate ability to keep our memories current. We are less efficient in our attempts to selectively rehearse TBR information and assimilate it

into LTM aside from TBF information. The data displayed in Tables 1 and 2 argue against a differential elicitation-at-test interpretation of the connectedness variable.

Some TBF-cued sentences may have gained long-term storage and accessibility via their novel or bizarre nature. Consider, "Imagine that you are slowly dying while smoking," with the E's prepassage presentation comment, "This set of sentences is about behavior modification techniques on how to quit smoking," as a retrieval cue. It should be noted, however, that sentence interest was not found to be correlated with cued TBF sentence recall. Overall, Ss appear to have the same trouble positively forgetting uninteresting TBF sentences as interesting ones. The cueing procedure apparently overrides the differential sentence-interest factor which was found in the control condition.

Epstein (1972) has postulated a selective-search interpretation of some instances of the positive-forgetting phenomenon which were observed using probe paired-associate procedures. On the first two trials of the present study, the Ss may have searched their memories for the TBR set of sentences at test. It appears unlikely, however, that the superior TBR sentence to control sentence accessibility which was observed on the last trial is due to the selective search of a partially restricted search set. Under such a conception, cued-TBF sentence recall should have been equal to cued-TBR sentence recall. No evidence for output interference was found, and both types of sentences were given an equal opportunity for storage in long-term memory.

Providing sentence contexts for the Ss did not enable them to retrieve the key words or phrases of the TBF sentences on an equal level with the TBR sentences. Some Ss reported experiencing the "tip of the tongue" phenomenon (Brown & McNeill, 1966) in this test condition, indicating that some contexts were recognized without having accessibility to the missing key words or phrases. However, both TBR and TBF sentence retention were significantly facilitated as measured by the sentence-completion test over that as measured by the cued free recall test, with both p s < .01. Clearly, context prompts are beneficial to the Ss in recalling the key words or phrases from both sentence types.

Counter to the prediction based on the Davis and Okada (1971) results that TBR sentence key words would be recognized better than TBF sentence key words, Ss were able to indicate the correct key word or phrase from a set of four choices at a statistically equal level for the two sentence types. Apparently, the 5-sec presentation time was sufficient time for TBF-cued sentence substances to be stored in long-term store. Caution must be exercised in interpreting this finding as evidence for an equality of storage of TBR and TBF sentence substances, however. There are pronounced ceiling effects in both the probability of TBR

multiple-choice recognition (.95) and the probability of TBF multiple-choice recognition (.92). Passages with greater numbers of sentences would be required as stimulus materials to attempt to substantiate the equality of storage notion.

The present results have implications for single-presentation information transfer from a source to a non-note-taking receiver. A source systematically cueing his receiver to remember and forget certain portions of a structured message is, of course, inappropriate; but systematically cueing the receiver with respect to the "importance of further processing" of each major concept in a message is a different proposition with possibly the same consequences. Cued properly, the "less important" portions of a message need not be lost from the receiver's memory, but rather made inaccessible. Stored knowledge of some parts of a message may be adequate and even desirable to gain an increase in receiver accessibility for the other parts. The present results suggest such a presentation technique which would increase the accessibility for those portions of the message which the source wants the receiver to have most accessible, while maintaining the same level of availability for the other portions or possibly even a constant level of availability across the entire message. After each postinput cue, the source should pause to allot the receiver the time necessary to reflect on the previous input and cues (selective rehearsal). Much research needs to be done, however, before such techniques could be considered completely effective. First, postinput cueing assumes an attentive and cooperative receiver. The present procedure utilizes selective rehearsal of input, not prompted selective attention to input. Methods of modifying the procedure to circumvent "daydreaming" and "cue guessing" by the receiver need to be explored. Second, and aside from the fact that the present equality of TBR and TBF sentence recognition may have been due to a ceiling effect alone, the level of TBF sentence availability may be unstable over longer retention intervals. Third, it may also be the case that the positive-forgetting phenomenon which can be observed with word lists and structured sets of sentences cannot be observed with more connected forms of discourse. Bjork and Woodward (1973) found

that 10 times as many TBR words were accessible at test as were TBF ones; but the present results show that only 1.85 times as many of the TBR sentences were accessible at test as were the TBF sentences. Attempts to control artificially the differential grouping and selective rehearsal of the relevant or important bits of information may be totally ineffective with more ordered or connected verbal materials.

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