*Psychological Reports*, 1975, 36, 155-158. 

# ORIENTING TASKS AFFECT RECALL PERFORMANCE MORE THAN SUBJECTIVE IMPRESSIONS OF ABILITY TO RECALL[1]

JAMES E. CUTTING

*Wesleyan University and Haskins Laboratories, New Haven, Connecticut*

*Summary.*—The type of task performed when 354 undergraduates listened to a list of words significantly affected their ability to recall that list. Subjective impressions of ability to recall, however, did not correspond to the number of items which could be recalled. Awareness lagged behind amount of incidental learning.

Jenkins and his co-workers (Hyde & Jenkins, 1969, 1973; Johnston & Jenkins, 1971; Till & Jenkins, 1973; Walsh & Jenkins, 1973) have demonstrated that the type of orienting task subjects perform when listening to a list of words substantially affects their ability to recall those words. Prototypic of tasks which yield extreme results in this paradigm are E-checking and Pleasantness-judging. In performing the E-checking task one group of subjects listens to each word and makes a check in the appropriate column on an otherwise blank response sheet whether or not the word, when written out, has at least one letter "e" in it. This task is thought to involve a superficial type of word processing which is unlikely to engage semantic memory. In performing the Pleasantness-judgment task another group of subjects, listening to the same words, rates each word as "pleasant" or "unpleasant," with the binary dimension left open-ended in its definition. This second task directly involves semantic judgments and thus may easily invoke semantic memory processes.

Perhaps the most interesting, and certainly the most enjoyable, result occurs when subjects are not told to remember the list of words until after they have performed the orienting task. The mean number of words recalled by each group in this situation is taken as a measure of the amount of incidental learning. Pleasantness-judges consistently outperform E-checkers in mean number of words recalled (although both groups tend to groan an equal amount). If this result reflects the difference in *incidental* learning between the two groups, one might predict that subjects in both groups would be unaware that they are acquiring any useful information which could be used at a later point in time. Exps. I and II attempted to measure the subjective impression of the amount of incidental learning in both groups prior to recall of the items.

## EXPERIMENT I

### *Method*

One hundred sixty-six Yale University undergraduates in an introductory psychology course were divided into two groups according to where they sat in the lecture hall: 76

[1]Reprint requests should be sent to the author at 270 Crown Street, New Haven, Conn. 06510. I wish to thank C. Opsahl and L. R. Brush for their aid in Exps. I and II, respectively.

near the center were assigned as E-checkers and 90 on both sides as Pleasantness-judges. A list of 24 words was read in citation form with approximately 2 sec. between items: eagle, spinach, sadness, yellow, robin, shark, mountain, carrots, surprise, orange, tundra, pickles, lobster, hawk, black, laughing, ocean, brown, bluejay, mackeral, dismay, lettuce, desert, trout. After performing the orienting task all subjects were asked to rate themselves as to how well they *might* do if asked to recall the words that they just heard, using a scale from 1 (for very poor performance) to 10 (for very good performance). Then, anticlimax of anticlimaxes, they were asked to recall as many of the words as they could remember. All subjects were given 3 min. to write their responses.

*Results and Discussion*

As shown in Table 1, Pleasantness-judges recalled an average of 5.5 more words than E-checkers, corresponding to 23% better performance ($t_{164} = 18.8$, $p < .0001$), yet both groups rated themselves about the same in their ability to recall the words. In fact, Pleasantness-judges rated themselves slightly lower in recall ability than did E-checkers, although this difference was not significant.

TABLE 1

OBTAINED PERFORMANCE AND SUBJECTIVE RATINGS FOR TWO ORIENTING TASKS

| Measure | E-checkers | Pleasantness-judges | $p$ |
|---|---|---|---|
| Mean number of words recalled (% recalled) | 9.0 (38%) | 14.5 (61%) | <.0001 |
| Mean self-ratings of recall ability | 5.6 | 5.2 | |

It appears that learning in this task is not only incidental according to the instructions, but it is also unrecognized in terms of how much the subject felt he or she has learned. This result is surprising in that, to confirm his impression of ability to recall, the subject needed only to generate a number of items and reflect on the ease with which this could be done. One might have predicted that subjects would do exactly this and that E-checkers would quickly realize that they could not remember many words and consequently rate themselves lower than the Pleasantness-judges. The mean of a scale from 1 to 10 is 5.5 and both groups strongly demonstrate regression toward this value. It appears that requiring an estimate of ability to recall is insufficient to engage the recall process enough for a difference between the groups to be manifested. Would a more concrete estimate better serve to reflect differences in recall? In Exp. II a comparable group of subjects was asked to estimate the number of words they could recall before being asked to recall the items.

## EXPERIMENT II

*Method*

The same list of words was read to 188 undergraduates at Wesleyan University in an introductory psychology course: 84 near the center of the hall were assigned as E-checkers and 104 on either side as Pleasantness-judges. The instructions were the same as in the previous experiment except that before the students were asked to recall the

list they were asked to estimate how many words they *might* recall if asked to reproduce the items.

*Results and Discussion*

As shown in Table 2, Pleasantness-judges recalled an average of 4.9 more words than E-checkers, corresponding to 21% better performance ($t_{186} = 11.53$, $p < .0001$). Estimates of words recalled show a similar but smaller difference. Pleasantness-judges estimated that they could recall fewer words than they actually did recall, whereas E-checkers slightly overestimated their ability to recall. The result is that the estimates differed by an average of 2.5 words, or only 10% ($t_{186} = 4.7$, $p < .001$). Of those students who did not accurately predict the number of words that they would recall, 60% of the E-checkers but only 35% of the Pleasantness-judges overestimated their ability to recall. Subtracting obtained from predicted recall scores, this interaction was statistically reliable ($t_{186} = 4.32$, $p < .001$). As in the previous experiment estimates regress toward a mean value between recall scores, but the regression here is not as complete.

TABLE 2

OBTAINED AND ESTIMATED PERFORMANCE FOR TWO ORIENTING TASKS

| Measure | E-checkers | Pleasantness-judges | $p$ |
|---|---|---|---|
| Mean number of words recalled (% recalled) | 9.0 (37%) | 13.9 (58%) | <.0001 |
| Mean estimate of words recallable (% recallable) | 10.0 (41%) | 12.5 (51%) | <.001 |
| Obtained — Estimated | −1.0 | 1.4 | <.001 |

It seems unlikely that the superiority of the Pleasantness-judges in both experiments could be accounted for in terms of the location of their chairs in the lecture hall. The E-checkers always sat between the two groups of Pleasantness-judges and directly in front of the experimenter/lecturer. Thus, if anything room acoustics appear to favor E-checkers over Pleasantness-judges. The obtained superiority also cannot be accounted for in terms of rehearsal, task difficulty, or effort (Walsh & Jenkins, 1973) but rather in terms of processes which enrich memory traces (Walsh & Jenkins, 1973; Craik & Lockhart, 1972). The results of Exp. I suggest that subjects are unaware of enriched traces when given the vague cue of estimating how well they might do in a recall task. In Exp. II, however, when given the more specific cue of estimating how many words they could remember, differences appear but not to the extent that actual ability to recall differs. E-checkers are quite accurate in their estimates (with moderate overestimation), whereas Pleasantness-judges substantially underestimate their abilities. This underestimation may be linked to the fact that Pleasantness-judges tend to cluster items in recall according to category (Hyde &

Jenkins, 1969, 1973)—"spinach, carrots, pickles, lettuce"—whereas E-checkers are typically unaware that such categories exist.

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*Accepted November 13, 1974.*