

Gallo, Roediger, & McDermott (2001, Psychological Bulletin & Review)

Study and Test Instructions for Each Condition

Instructions for each condition of the experiment are reproduced below as they were read to subjects by the experimenter. Italicized words were instructions to the experimenter, not the subjects. To avoid redundancy, sections of instructions that were identical across some conditions were only reproduced once below, and subsequent occurrences of these sections were simply noted in brackets.

No Warning Instructions

Study instructions. In this experiment you will hear lists of words presented over the computer headphones. Your job is to try to remember the words you hear. Your memory for these words will be tested after all lists have been presented. You will hear 12 lists in all, separated by a brief 5 second pause. Each list will have 15 words, and you should pay close attention because each word will be presented quickly - about 1 word per second. *Answer questions then start study phase*

Test instructions. You will now be given a recognition memory test for the 12 lists that you have studied. A long list of test words will be visually presented one at a time on the computer screen. Some of these words were presented in the lists you heard, the OLD words, and some were not, the NEW words. Your job is to figure out for each word whether it's OLD, a studied word, or NEW, a not studied word.

If you think the word was presented in any of the study lists, i.e., you heard the word at study, circle OLD on your response sheet next to the number that corresponds to that test item. If you do not recognize the word from any of the lists, circle NEW.

In addition to the old/new judgment, for the words that you recognize as OLD we would like you to decide whether you REMEMBER or KNOW that the word was in the list. Let me explain the distinction.

Remember Judgments: "To remember" is the ability to recollect some specific aspect of what happened or was experienced at the time you initially studied the word. For example, you remember the way the word sounded, something that happened in the room, what you were thinking or doing at the time, the words that came before or after the word, etc. Basically, you will say you REMEMBER a word when the word brings back to mind a particular thought or image from the time of study, or something about the way the word was presented.

Know Judgments: If you can not recollect anything about the word's actual occurrence in the study list, but nevertheless are sure that the word was studied, then you "just know" the word was studied. "To know" is the ability to recognize things without being able to remember anything specific about a past experience – you "just know" it was there.

For a real life example, suppose you saw me in the grocery store next week. You might recognize me in one of two ways: you could remember me as the experimenter you met last week in the psychology building, or you could just know that you had seen me recently, without remembering the context.

You will make the remember/know judgment whenever you encounter a word that you think was OLD, or studied. The judgment will be made by simply circling R for REMEMBER or K for KNOW. *Answer questions about remember/know judgment.*

To summarize, for each test word, circle OLD if you recognize it as having been studied or NEW if it was not in the study list. In addition, after each word you label as OLD, circle R or K for REMEMBER or KNOW. You may then press the "enter" key for the next test word. Your responses are not being timed, so please take the time to be as accurate as possible. Once you have finished, please turn your sheet over and wait quietly until everyone has completed this task. *Start test phase.*

Warning Before Study Instructions

Study instructions. [The first paragraph of the study instructions was identical to that of the No Warning condition.]

Each list is comprised of related words. All the words in each list are associated to one common word. Sometimes the common word is present in the list, and other times it is not. It has been found that, even when this common word is not presented, people often falsely remember it as having been in the list. We want you to avoid making this memory error. Thus, for each list, you should try to figure out what the word is that ties all the other words together and note whether or not that word is present in the list.

As an example, listen to the following list which will not be used in this experiment: bed, rest, awake, tired, dream, wake, snooze, blanket, doze, slumber, snore, nap, peace, yawn, drowsy.

In this case, "sleep" is the word that links all the above words. Even though it was not presented in the list I read to you, people often falsely remember it as having been on the list. As I mentioned before, sometimes the common word, like "sleep," will be present in the list and other times it will not. Sometimes people mistakenly recognize the critical word that links together all the others, such as "sleep," even when it was not presented.

Do not make this error. Be sure to notice and remember whether or not the linking word is present. *Answer questions then start study phase.*

Test instructions. [The first two paragraphs of the test instructions are identical to those in the No Warning test instructions.]

When you make these decisions, keep in mind that any test item which fits well within the theme of a list may be the common item which is related to all of the words of that list. Sometimes this item was presented in the study list, and other times it was not. Thus, you should be sure NOT to circle OLD for those common items that were NOT actually presented at study.

[The remember/know instructions were identical to those of the No Warning condition.]

To summarize, for each test word, circle OLD if you recognize it as having been studied or NEW if it was not in the study list. In addition, after each word you label as OLD, circle R or K for REMEMBER or KNOW. You may then press the "enter" key for the next test word. Your responses are not being timed, so please take the time to be as accurate as possible.

Again, only circle OLD if you think the word appeared in one of the studied lists; in other words, do not be fooled by those common items that were not actually presented with their lists. Once you have finished, please turn your sheet over and wait quietly until everyone has completed this task. *Start test phase.*

Warning After Study Instructions

[NOTE: Instances where these instructions varied for the primary warning after study condition (in which the critical item was sometimes studied) and the warning after study-

No CT condition (in which the critical item was never studied, and hence there were no critical targets) are appropriately marked]

Study instructions. [The study instructions were identical to those of the No Warning condition.]

Test instructions. You may have noticed that each list you heard was comprised of related words. All the words in each list were associated to one common word. *For the primary condition:* Sometimes the common word was present in the list, and other times it was not. *For the No CT condition:* This common word was never presented in any of the lists. It has been found that, even when this common word is not presented, people often falsely remember it as having been in the list. We want you to avoid making this memory error.

As an example, listen to the following list which was not used in this experiment:
bed, rest, awake, tired, dream, wake, snooze, blanket, doze, slumber, snore, nap, peace, yawn, drowsy.

In this case, "sleep" is the word that links all the above words. Even though it was not presented in the list I read to you, people often falsely remember it as having been on the list. *For the primary condition:* As I mentioned before, sometimes the common word, like sleep, was presented in the list and other times it was not. Sometimes people mistakenly remember the critical word that links together all the others (e.g., sleep) even when it was not presented. Do not make this error. *Answer questions.*

[The next two paragraphs are identical to the first two paragraphs of the No Warning test instructions].

When you make these decisions, keep in mind that any test item which fits well within the theme of a list may be the common item which is related to all of the words of that list. *For the primary condition:* Sometimes this item was presented in the study list, and other times it was not. *For the No CT condition:* This item was never presented in the study lists. Thus, you should be sure NOT to circle OLD for those common items that were NOT actually presented at study.

[The remember/know instructions, as well as the remaining test instructions, were identical to those of the Warning Before Study condition.]

Supplemental d' and A' Estimates for all Four Conditions

We adjusted recognition for list items and critical items for each subject by using several procedures (Snodgrass & Corwin, 1988). The means of these estimates are reported in the table below. With the high-threshold correction procedure, recognition of list items and critical items was corrected by subtracting false alarms to list items and critical item controls, respectively, yielding measures of sensitivity (Pr). These data were provided in the paper. One parametric (d') and one nonparametric (A') estimate of sensitivity were also calculated. To obtain these latter estimates it was necessary to avoid hit rates of 0 or 1, so the data were first transformed so that $p(x) = (x + .5)/(\underline{n} + 1)$. For A', when a subject's hit rate was less than their false alarm rate, we used the special formula provided by Aaronson & Watts (1987). All three estimates (Pr, d', and A') yielded an identical pattern of results.