MEMORY:
SERIAL LEARNING

The serial learning method is the oldest method used to study learning/memory and was first used by Ebbinghaus in 1885. Although Ebbinghaus asked and answered many questions with this procedure, you will focus on only one very simple but robust question. Does the position of an item in a serial list influence ones ability to recall the item?

Method

Subjects:

Male and female college students.

Apparatus:

Two sets of ten 3 x 5 index cards. On one side of each card is an item.

Procedure:

This procedure will be done twice. Each person will be the experimenter once, and subject once. Decide who will be the experimenter first. Then the experimenter picks one envelope without looking into either envelope. Place the envelope not chosen to the side. Then the experimenter opens the chosen one and checks that the items are in the correct order. The subject is to learn the list of items in the order they are shown. The order does not change throughout the experiment. They will answer before they see the item in each trial, so their answer is called an anticipation. Get out you data sheet and a pen or pencil to record the data. For a correct anticipation make a check on the appropriate line, and an X for an incorrect anticipation.

At this time the experiment proper begins. Show the first card to your partner, and ask for the next item on the list (the first time through the subject can only guess at the answer). After approximately 2 seconds put the card down, showing the correct answer. Wait another two seconds while your partner can try to say the item on the next card. Go through the entire set of 10 cards this way. After the last item is displayed, pick up the stack of cards, and being careful to keep the order the same, repeat this procedure. After about 6 seconds, start the next trial. Try to show the next item every 2 seconds. Continue with this procedure until your partner correctly anticipates all 10 items on the list with no intervening errors. That is, until one trial on the data sheet has each item correctly anticipated.

On the accompanying data sheet, put a check by each item anticipated correctly. If your partner takes more trials than on both data sheets, just turn the sheet over and continue recording the data.

After the first subject learns all items in the correct order, the subject and experimenter switch jobs. The new experimenter opens the envelope placed to the side, and proceeds with the same procedure. There are data sheets for the second experiment. This experiment is complete

when the subject can correctly anticipate all items in the correct order. Use the second set of data sheets for this experiment.

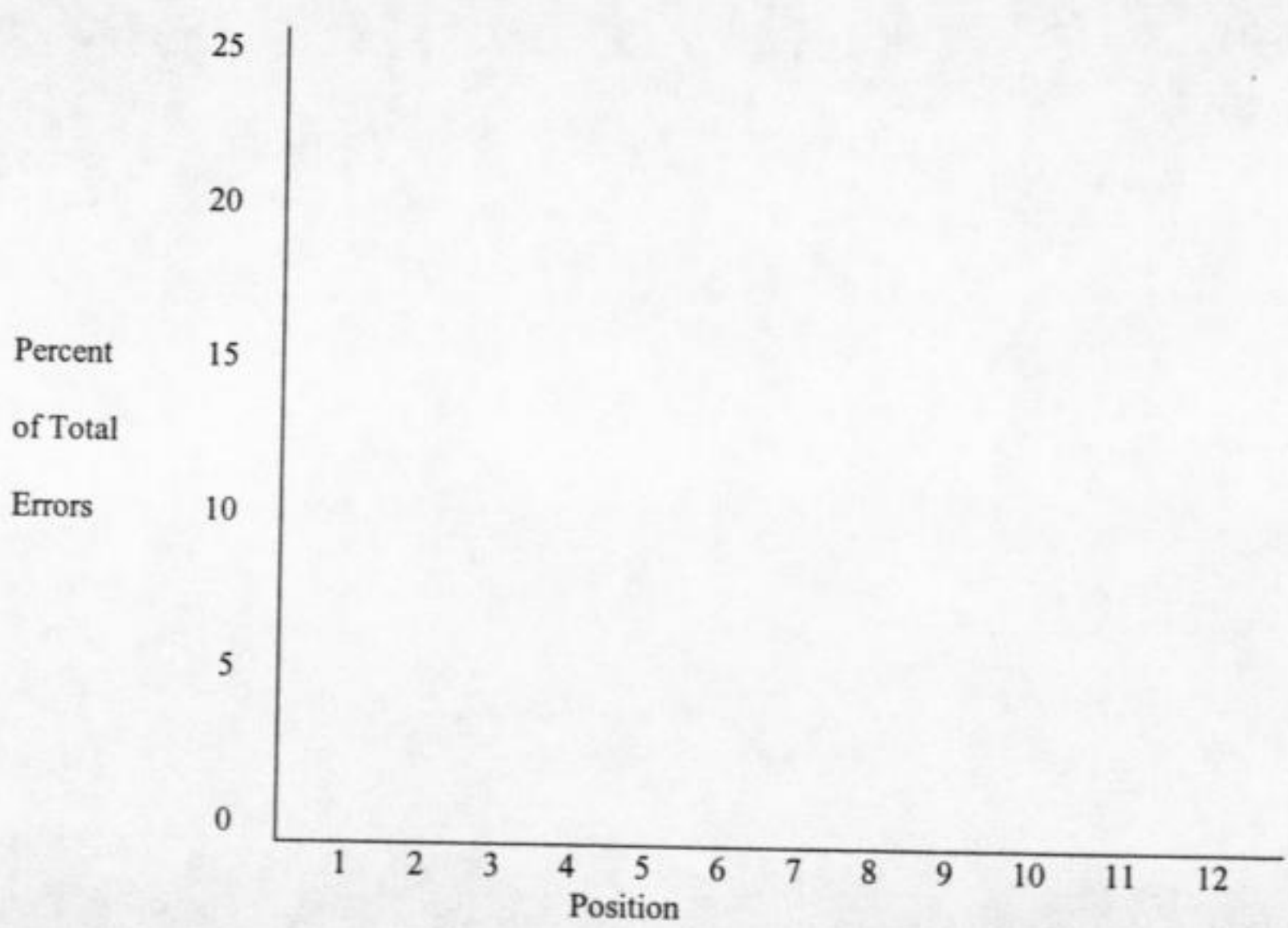
Results

The main result to examine is the total number of errors for each item in each list. Use the sum row at the bottom of the data sheet to calculate the total number of times each item was incorrectly anticipated (errors). Then, calculate the percent of the errors that occurred to each item. Do this by dividing the number of errors by the grand total of errors and multiply by 100. Plot this on the accompanying graph. Each experimenter should do this for the experiment they conducted.

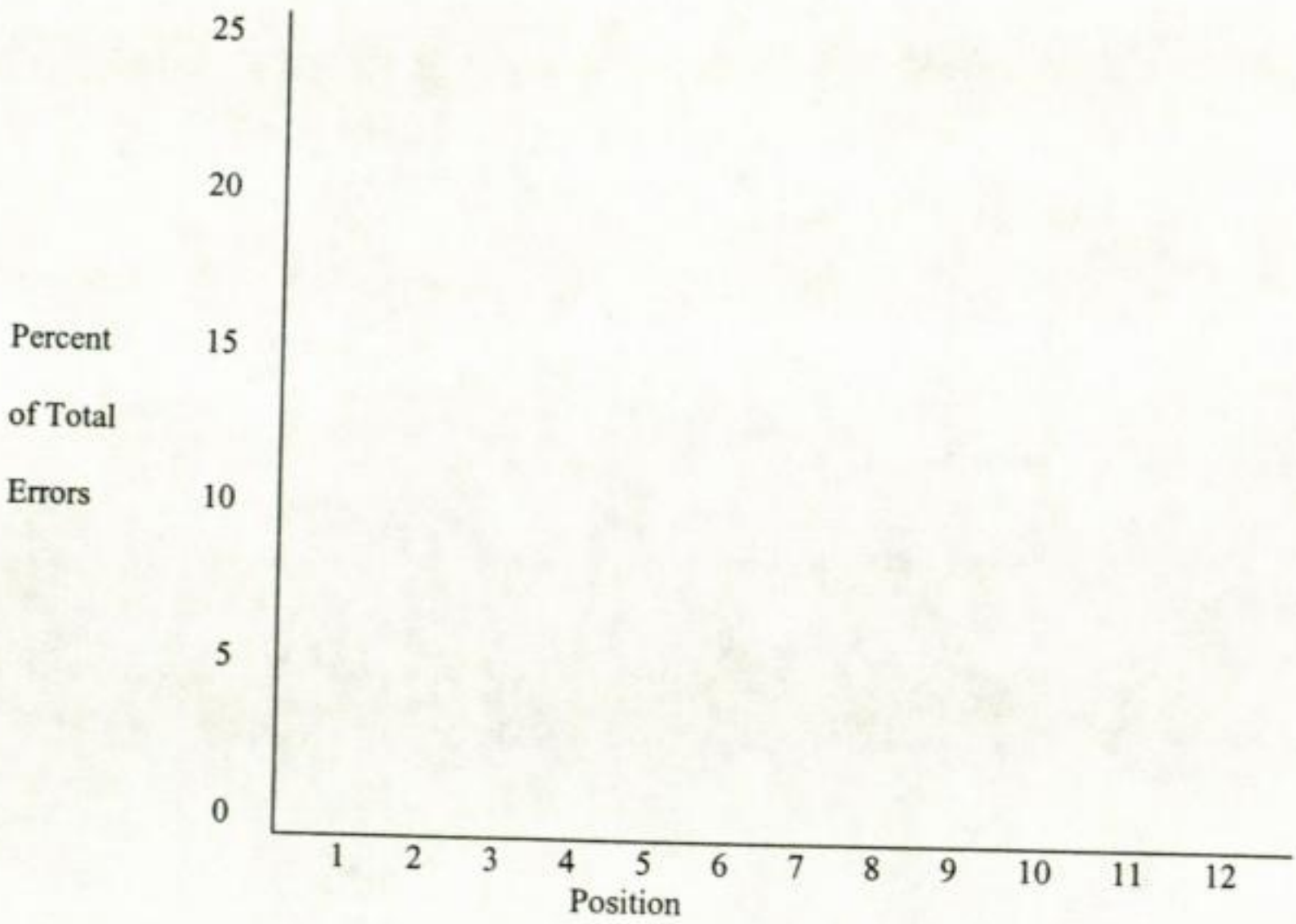
Discussion

This outcome is called the serial position effect. Items near the beginning and end of lists are easiest to learn (fewest errors). Items around the middle are most difficult to learn (more errors). Can you think of an instance demonstrating the serial position effect from you life? Think of all the things you've had to memorize in school. Knowing of the serial position effect, what does this tell you to do to facilitate studying and recall?

Type of item: ___ CVC (consonant-vowel-consonant) ____ words



Type of item: ___ CVC (consonant-vowel-consonant) ____ words



Were the two lists, CVC and words, equally difficult to learn – were the same amount of errors made in learning the two lists? Why do you think there were differences in difficulty?

Data sheet for serial learning - Experiment 5

Type of item: ___ CVC (consonant-vowel-consonant) ____ words

Item	1	2	3	4	5	6	7	8	9	10
Trial 1										
Trial 2										
Trial 3										
Trial 4										
Trial 5										
Trial 6										
Trial 7										
Trial 8										
Trial 9										
Trial 10										
Trial 11										
Trial 12										
Trial 13										
Trial 14										
Trial 15										
Trial 16										
Trial 17										
Trial 18										
Trial 19										
Trial 20										
Trial 21										
Trial 22										
Trial 23										
# of Errors										
									Grand Total Errors:	____
% errors										

Type of item: ___ CVC (consonant-vowel-consonant) ____ words

Item	1	2	3	4	5	6	7	8	9	10
Trial 1										
Trial 2										
Trial 3										
Trial 4										
Trial 5										
Trial 6										
Trial 7										
Trial 8										
Trial 9										
Trial 10										
Trial 11										
Trial 12										
Trial 13										
Trial 14										
Trial 15										
Trial 16										
Trial 17										
Trial 18										
Trial 19										
Trial 20										
Trial 21										
Trial 22										
Trial 23										
# of Errors										
										Grand Total Errors: ____
% errors										