

Analysis Demos

Jordan B. Gunn
Cognition and Cognitive Neuroscience Program
Vanderbilt University
Nashville, TN 37235
`jordan.gunn@vanderbilt.edu`

Sean M. Polyn
Department of Psychological Sciences
Vanderbilt University
Nashville, TN 37235
`sean.polyn@vanderbilt.edu`

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Demonstrations of analysis supported by my compmemlearn library.

2 The Serial Position Effect

The serial position effect describes how our memory is affected by the position of information in a sequence or list. Research tends to find that people best remember the first and last items in a series and find it hard to remember the middle items. To measure the serial position effect, research participants perform a free recall task where they study a list of items and subsequently “freely” recall the items in the order in which they come to mind. The recall rate of each item at each study position across these lists reflects the serial position effect.

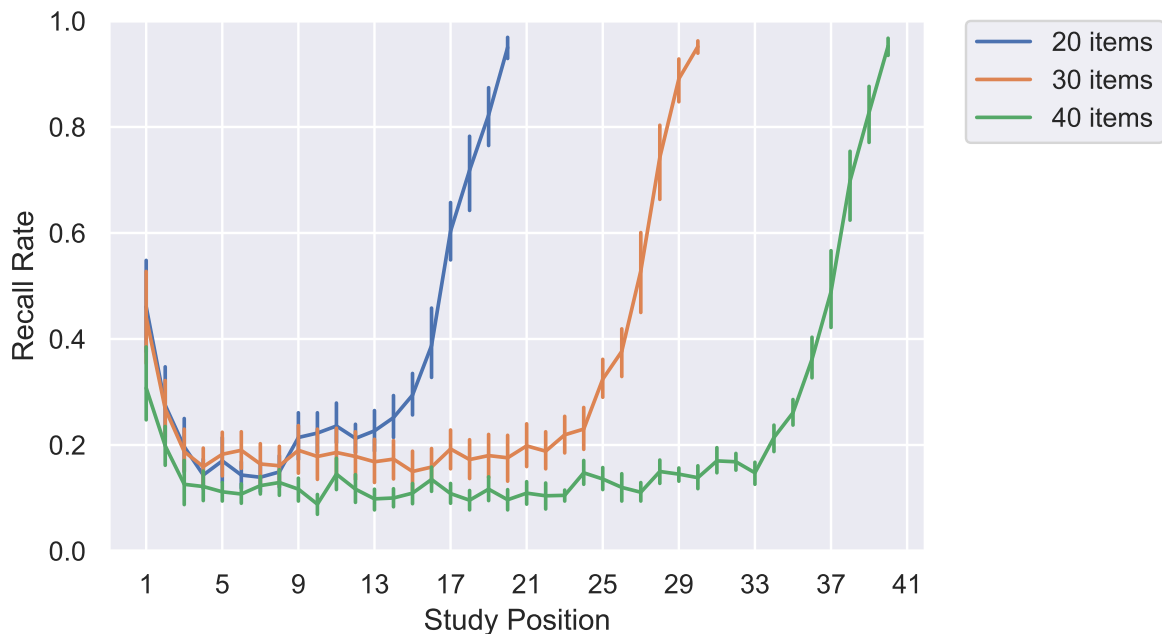


Figure 2.1: The serial position effect measured as a function of list length using data from Murdock Jr (1962).

3 The Lag-Contiguity Effect

The lag-contiguity effect illustrates how episodic associations are graded, exhibiting power-function decay with increasing lag. Recall of an item has a tendency to evoke not only adjacent list items, but other nearby items as well. In addition, episodic associations appear to be asymmetrical, favoring retrieval of items in the forward order.

The lag-CRP analysis measures the lag-contiguity effect in free recall data by tracking the conditional probability of retrieving an unrecalled item as a function of its lag in the study list from the last recalled item. For example, if a research participant recalls the third item presented in a list and then the fourth, the corresponding lag is +1. If a participant instead recalls the first item after recalling the third item, the measured lag is -2. The ratio of actual divided by possible lag transitions across a dataset over a range of lag values tends to identify a lag-contiguity effect.

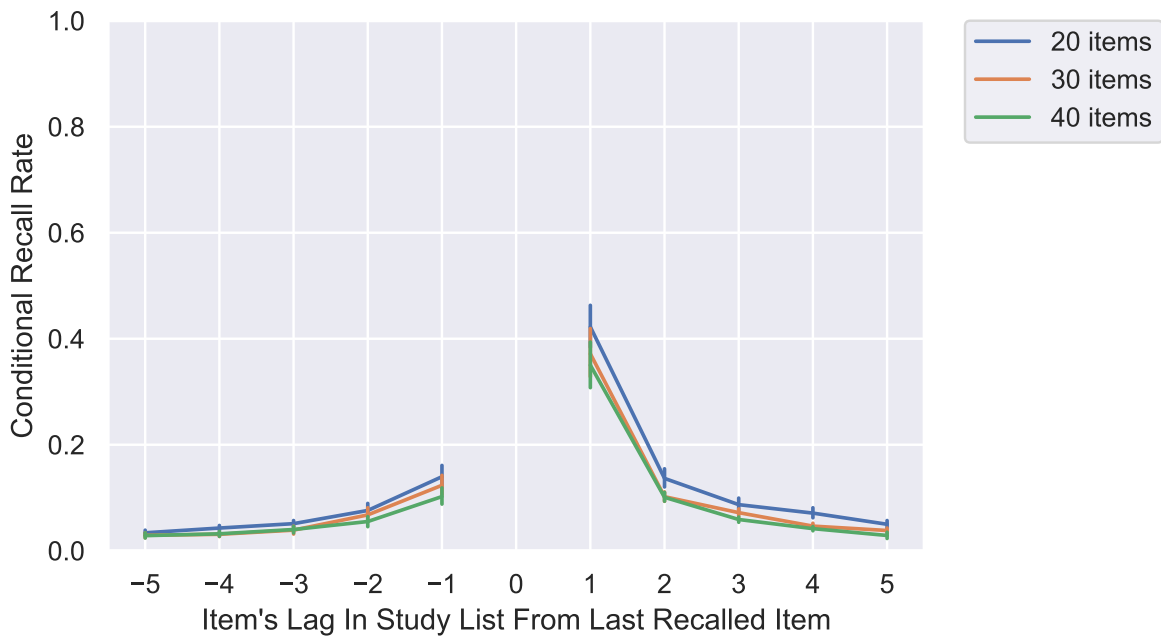


Figure 3.1: The lag-contiguity effect measured as a function of list length using data from Murdock Jr (1962) and the lag-CRP analysis.

4 Probability of First Recall

The probability of starting free recall with the item at each position in a studied sequence or list.

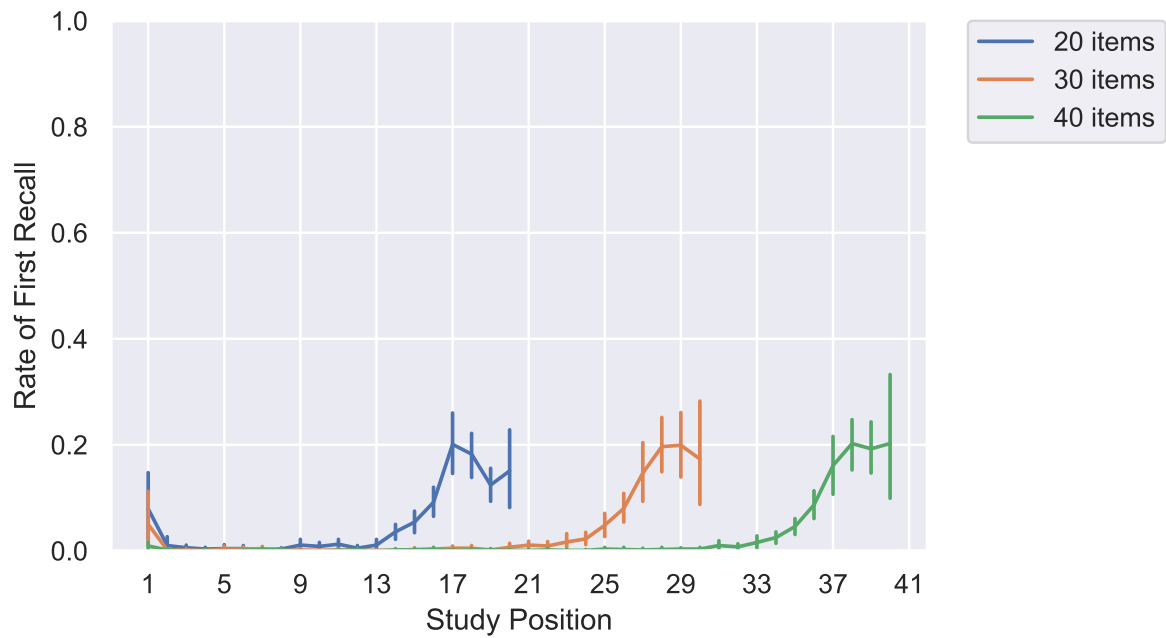


Figure 4.1: Rate of first recall by serial position measured as a function of list length using data from Murdock Jr (1962).

5 References

Murdock Jr, B. B. (1962). The serial position effect of free recall. *Journal of Experimental Psychology*, 64(5), 482.