

APA citation of journal article: Middlebrooks, C. D., Kerr, T., & Castel, A. D. (2017). Selectively Distracted: Divided Attention and Memory for Important Information. *Psychological Science*, 28(8), 1103–1115. <https://doi.org/10.1177/0956797617702502>

### The Basics:

1. What was the broad question being asked by this research project? What was the specific question being asked by this research project?
  - a. Summarize the background information on the research topic in three sentences.
  - b. What is the gap in the literature identified by the researchers? What question(s) are they trying to answer? What is their hypothesis and what should happen if the author's hypothesis is true?
  - c. What are alternative hypotheses?

*I'd actually say that the "specific question" being asked by this research is also quite broad, being how do distractions and divided attention affect our ability to remember valuable information? Maybe the broader question is how can we take the information we know about the effect of distractions and multi-tasking on our memory and apply it to our study habits to make us more productive. The important background information is as follows: 1) selective attention to, and memory for, the most important information can be maintained despite circumstances that otherwise result in memory impairments 2) people are already aware that distractions and divided-attention affect their memory and study-habits, yet most are still unmotivated and unwilling to change their ways, and 3) prioritizing critical information requires an important "dissociation between memory itself and the strategizing in which learners engage during encoding." The researchers do not mention a gap of literature. This may be because they are either replicating a previously conducted experiment or just building off of previous research. It is already widely known that distraction, selective-attention, and multi-tasking have negative effects on our memory of information. Since there is already plenty of research on this topic and it has been proven that our memory is affected by distractions and divided attention, I'd actually say that the null hypothesis was probably that distractions and divided-attention do affect our memory, while the alternative hypothesis is that there is no correlation.*

2. What experiments were done to test the hypothesis or investigate the research question?
  - a. Explain the task design – what are participants instructed to do and what is being measured? Think about the independent and dependent variables.

*Two experiments were conducted to investigate the research question. In the first, students were split up into four different groups. Each student has a list of 20 words to memorize, with some words being worth more points than others, top symbolize more crucial information. One group had no distractions, one group had to split their attention with another task in which someone else read numbers while they had to press the space bar every time they heard someone read three odd numbers in a row, another group got to listen to familiar background music, and finally the last group listened to unfamiliar background music. The independent variable was the type of distraction they had and the dependent variable was how many points they got (how good their memory was). The*

*second experiment further tested the divided-attention condition and switched the digit task to a tone-detection one, with varying difficulties.*

3. What evidence supports each of the conclusions?
  - a. Before you read the discussion, summarize the main findings and link each one back to the research question(s). How does each result inform the hypothesis?

*The first experiment found no difference in the recall ability of people with no distraction, people who listened to familiar music, and people who listened to unfamiliar music. However, it did find that the group with the digit-detection task performed worse and had a diminished ability to remember the words relative to the other groups. These results inform the original hypothesis in that it further proves that divided-attention and multi-tasking have a negative impact on our attention. The second experiment confirmed that tone-detection tasks diminished participants' ability to remember the given words relative to the full-attention group. Moreover, both experiments found that every group still prioritized the higher-value words, regardless of their distractions.*

4. What are the major conclusions?
  - a. What do the results add to the field? How do the researchers interpret their findings? Summarize any limitations identified by the researchers.

*The major conclusions of the study were that neither multi-tasking nor passive exposure to background music prevented the groups from prioritizing the words of high-value, yet those with divided-attention did perform worse on the memorization task. The researchers interpreted their results as although distractions affect our memory, they do not affect our strategy for focusing on the more important information. No limitations were discussed.*

### **The Critique:**

1. Is the paper well written? How do you know? For week 2 & later, use this space to practice headlines & summaries of the articles via tweets.

*I personally did not enjoy reading this article. I found it to be unnecessarily confusing and messy. Moreover, I found it redundant and unnecessary as a study. The researchers clearly acknowledged the wide array of information and studies already published on this topic, so it seemed pointless.*

2. Do the conclusions seem logical given the data processed? Why or why not? Another way of thinking about this: do the results adequately support the conclusions that are drawn? Are there alternative explanations for the findings? What inferences about the hypotheses and questions can be made based on these results?

*Opposed to the other article, the conclusions in this one seem more logical given the data processed and the results definitely support the conclusions drawn. The data and results clearly showed that the group with shared-attention performed worse on the memorization task, yet all groups still prioritized the words with higher values attached to them. I do not see any alternative explanations for the findings.*

3. Are the conclusions important? How do you think this relates to everyday behavior?

*Not really considering we already knew this to be the case, since it has already been research heavily. The conclusions relate to everyday behavior in that we should obviously avoid all distractions while studying.*

4. What were the best aspects of the research presented, and how could the research be improved? Name at least one way to improve the experiment.

*The best aspect of the research presented was that the researchers admitted to not finding a difference between the no distraction group and the two music groups. This definitely adds to their credibility. The research could be improved by cleaning up the paper a little bit and making it less confusing. I would improve the experiment by also having the people complete other non-memorization tasks such as simple logic or math problems, so the effects of distraction can be further applied to everyday behavior.*

5. How would you follow-up this experiment or study?

*I would follow-up this experiment by conducting the experiment I wrote about above, where the effect of distractions on logic problems is studied.*

**Additional Resources:** What are the basic concepts that you need to know to understand the science presented in your paper? What other information or resources would help you better understand the paper? This is helpful to consider for your science communication pieces.

*I'd say that knowing more about Bayesian Inference and other statistics jargon would be helpful in further understanding the paper. The most confusing part was definitely how the results were calculated.*

### **Further Questions:**

Write at least five comments or questions about the article to discuss with the class.

1. It would be extremely difficult for an uneducated person to understand this paper.

2. This research simply seems unnecessary given the plethora of research already done on the effects of distraction on studying.
3. Why was word-memorization the task chosen?
4. Are there any further implications given the results besides that we should limit distractions?
5. I'm just generally wondering what the "science-world" thinks of this research paper.