

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.
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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?

In order to work productively, there seems to be a general understood consensus among most people that divided attention can negatively impact one's learning and memory. However, often times people exist and work/learn in spaces where distraction that would divide one's attention are inevitable. Many people still listen to music or work in places with distractions even when productivity is the driving factor to complete assignments or study.

The researchers identify a gap in the reasons why people tend to work effectively in situations where their attention is dividing or they are forced to multitask. They want to know the influence that distractions have on one's ability to selectively remember important information. They hypothesize that the distractions would inhibit one's ability to memorize information as it may make their memory more selective to only recall some information, but that of more value. If this were true, what should happen in the experiment is that participants would remember the words with higher value.

Alternative hypothesis would state that distractions and divided attention have no impact of one's performance on memory tests or overall ability to memorize important information.

2) What experiments were done to test the hypothesis or investigate the research question?

Experiment 1: Participants were randomly assigned to 4 different groups, each one representing different study conditions. The study conditions were as follows: full-attention, divided-attention, familiar-music, and unfamiliar music. Participants were shown 20 words and that those words would be ranked in value on a scale of 1-10 and instructed to remember as many of the words as possible while also aiming to get as large of a score that they could. At the end of the presentation, they would be asked to recall the list and then told their score

Experiment 2: Participants were randomly assigned to 4 study conditions: full-attention, tone-monitoring, paired-tones, and 1-back. The directions for participants in this experiment are the same as experiment 1, except tones would play in the background in 3 of the 4 conditions.

3) What evidence supports each of the conclusions?

Experiment 1: As far as overall recall performance, there was no statistically significant difference found between conditions for the performed tests. The data was about 66.67 times more likely

to be consistent with the null hypothesis than with the alternative. Memory overall was not impacted by the music distractions relative to memory in the control group.

Experiment 2: The results of this experiment showed that the influence of the tones impaired participants abilities to recall the words. There were no significant differences found among the three-done detection conditions with recall. Participants appeared to be engaged in tone-detection tasks.

4) What are the major conclusions?

The researchers concluded that neither multitasking nor exposure to background music prevented people from prioritizing memorizing higher-value words during the study. They also concluded that factors that would typically impair one's ability to recall memory may not have the same affect toward various methods of studying.

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.

Tweet Summary (lay): Music: distraction or useful study tool? While distractions like listening to music are often seen as a threat to learning and memory, psychologists found that there divided attention may not necessarily be all that bad come time to study for finals.

Tweet Summary (scientific): Psychologists find that there may not be a direct connection between learning/memory and studying in the context of multitasking. The presence of distractions throughout working and/or studying may not have much of an effect on an individual's performance of what he or she is working toward. Does this mean new study strategies need to be evaluated?

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?

The conclusions of this study seem logical because they match the data present with the study showing no obvious trend or causation between the independent and dependent variables. Therefore, the data suggest the researchers fail to reject the null hypothesis where multitasking/distractions/divided attention affect one's ability to recall items on the list, thus there being no relation between distractions and one's memorization skills for this particular activity.

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

The conclusions of the study don't strike me as all that important. The main aspect that I took away from reading this study was that despite the multitasking and divided attention, the ability to memorize the items on the list with or without value included was the same all around. This did not really

answer the initial questions proposed by the study, but it did show a common trend of prioritizing items of higher value among all participants. Overall, I think that studying strategies cannot be measured as they are only successful based on a person-to-person basis. It gave no introspection into any distinction between various distractions effectiveness on short term memory.

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 parts of the research presented would be the background information and the layout of each procedure. The experiment itself was pretty easy to understand. The research could be improved by eliminating the value aspect of memorized the items on a list. The variable of value likely conflicts with the impact that distractions have on recalling those items, so perhaps the study may yield different results that are more statistically significant if that factor was eliminated.

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

I would follow-up this experiment by eliminating assigned value to words/items on the list that participants were asked to memorize. I would also perform the study with other study conditions not presented in this study. For example, I am interested in seeing if food has any affect on a person's effectiveness in studying, so I would somehow incorporate that in a follow-up study.

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.

It would be helpful for someone reading the study to be familiar with common statistical terms and phrases used in in conducting experimental data analysis.

Further Questions:

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

1. What would this look like if some participants had learning differences, like ADHD or Dyslexia?
2. What types of objects were in the rooms where the experiment was occurring?
3. Instrumental music vs. music with lyrics?
4. Food as a distraction?
5. Certain people's occupations might prime them to be more accustomed to certain study conditions over others