

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. Researchers want to find if multitasking deteriorates with age. Multiple previous studies have found a correlation in age and deterioration of multitasking.
 - 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?

There has been a substantial amount of previous research as cited in the introduction. Although, these test for visuo-spatial processing, working memory and/or postural control. These researchers want to look more into age and multitasking decay.
 - c. What are alternative hypotheses?

Everyday life offers complex stimuli that people react to differently and therefore simulations in a lab might not be generalizable.

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.

Researchers set up a virtual car, with a real car seat and pedals and controls, but simulating it on a 48" TV. They had to follow a virtual lead car that drove consistently at 70km/h and often slowed down to 40 km/h and drivers had to brake to avoid collision. They were also presented with other sets of stimuli like announcements or questions

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?

Participants would drive more laterally when presented with stimuli, drove slower when presented with a visual stimulus and drove slower with a reasoning task more than memory or typing. This was more significant in older participants. Also 78% of older participants veered off the road in the typing task compared to 40% in the younger group.

4. What are the major conclusions?

Multitasking was more challenging for the older group as shown by the effects on their driving.

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

I think the results add that we know how different stimuli affect driving in younger and older groups, and there is a correlation between age and the deterioration in multitasking ability. Although, this might not be the case since lifelong experience could compensate for cognitive decay.

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.

Older Folks Can't Drive Because of This?!

Researchers find a group of older adults driving ability deteriorates with time

Time Takes Its Toll

A study showed that adults around the age of 70 showed deteriorated driving abilities when distracted

Does Experience outweigh decay?

Researchers question the decay of multitasking in older adults with driving simulations

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?

This makes sense. It is pretty commonly accepted aspects of someone deteriorate as they age. Alternate explanations can be that experience compensates for this cognitive decay shown in the experiment. Also, people might react differently in the real world as they are subject to complex stimuli and behavior.

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

The conclusions are important because they give insight into a division of research that hadn't been covered. There was research with cognitive decay, but the multitasking aspect allowed this research to be different

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.

I liked the contrast in the participants. However, I would have liked to see a 3rd middle aged group that shows the process of deterioration. Also, driving simulations or real-world

driving? I know there is a safety issue with real world driving but it is a lot different than a simulation.

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

As usual, I would discuss the findings and look for any ways to improve the experiment, and then talk about the implications of the study and if there is an issue, look to solve that issue

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.

Knowing the study design was important because it allowed for me to understand the process the participants were put through in order to get data. Again, a science press release or something for a lay audience would help decipher the article faster, but not necessary.

Further Questions:

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

1. Would results change in real world driving?
2. Would a middle age group be good to include?
3. Does a driving simulation offer true results?
4. Why weren't common tasks like eating or talking on the phone included in the distractions?
5. Does experience compensate for cognitive decay and multitasking?