

NAME: EXAMPLE QALMRI

PAPER TITLE: Change blindness in the absence of visual disruption (Simons, Franconeri, & Reimer, 2000)

QUESTIONS:

- **What was the broad question being asked by this research project?**
 - How do we detect changes in the environment?
- **What was the specific question being asked by this research project?**
 - Can change blindness occur in the absence of a visual disruption?

ALTERNATIVES

- **What was the author's hypothesis?**
 - H1: Change blindness occurs because a visual disruption distracts us away from a motion cue, which is required to detect a change.
- **What were the alternative hypotheses?**
 - H2: All changes produce a "change signal", and we may fail to detect a change if it is very weak (but not absent).

LOGIC

- **What was the logic of the hypotheses?**
 - E.g., If H1 is true, then...
 - **If H1, then** if there is no visual disruption, people should detect gradual changes (weak change signal) in the environment.
 - **If H2, then** people should fail to detect gradual changes (weak change signal) in the environment even when there is no visual disruption.

METHODS

- **What were the methods used?**
 - Participants were shown images of scenes and were required to indicate where in the image a change had occurred.
 - There were three conditions. In the "gradual" condition, the images changed gradually over the course of trial. In the "disruption" condition, the first image was shown for 11.25 seconds, followed by a blank grey screen (250 ms), followed by the second image. Finally, in the "guessing" condition, participants were shown one of the two images and asked to guess where they thought the change would have been; This was simply a control condition to determine whether people guess the changes without noticing them.

- In both experiments, participants viewed images of natural scenes. In the first experiment, the changes included an object appearing or disappearing from the scene, and in the second experiment, an object would change colors.
- They used colors in the second experiment because gradually adding/removing an object in the scene would mean that at some point the object is partially transparent. This partially transparent object is anomalous and may differentially improve change detection.

RESULTS

- **What were the important results?**
 - In experiment 1, they found no difference between participant's ability to detect changes in the disruption and gradual change conditions. Participant's failed to notice changes in ~35-45% of trials.
 - In experiment 2, they found that participants failed to notice changes more often in the gradual change condition (~70% of trials) as compared to the disruption trials (~60% of trials).

INFERENCES

- **What inferences about the hypotheses and questions can be made based on the results?**
 - The results of the experiment are consistent with the second hypothesis: change blindness can also occur when the change signal is weak and does not necessarily require a visual disruption. These results suggest that you do not need to be "distracted" away from the change to fail to detect them. To detect changes, we might be heavily reliant on strong change signals (like sudden motion cues). When we weaken them, by changing the scene gradually, we can fail to notice even large changes in the scene.

HOW DOES THIS ARTICLE CONNECT TO THE CONCEPTS DISCUSSED IN THIS WEEKS CHAPTER?

- This article relates directly to the change detection and "change blindness" phenomena discussed in the textbook. Change blindness was said to primarily be caused by a failure in attention; When we are distracted away from a change, we fail to detect it. Here, the authors show that sometimes, even when we are not distracted, we can still miss large visual changes. So not only do we need to pay attention, the size of the change signal matters too.