Now You See It, Now You Don’t: Effects of Change Blindness on the Ability to Detect Change

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Abstract

Everyday changes often go unnoticed, a concept known as change blindness. Change blindness was evaluated in the present study using a slideshow of images with one of three types of change – something added, something removed or no change. Participants (n=85) also rated their own and others’ ability to detect changes. They were asked to rate themselves before and after seeing the slideshow. Results showed that individuals recognized when something was removed from an image more often than other types of change. Participants did not overestimate their ability to detect change, but did significantly underestimate others’ ability to detect change.

Methods

Participants: 85 undergraduate introduction to psychology students – 18 male students, 61 female students, 6 did not report their sex

Age ranged from 18-21, M = 19.20, SD = .64

78 were Caucasian, 4 were African-American, 2 were Hispanic, and 1 reported to be of a different ethnicity

8 were freshmen, 59 were sophomores, 17 were juniors, and 1 was a senior

All 85 participants were single

Data was recorded on the answer packet given to each participant.

There were 15 spaces to record their answers for each image. Answer spaces were set up where it said “Image x had: something added, something removed, or no change.” After checking one of those there was a space next to it for writing what exactly changed. The answer to the above example would be checking “something removed” and writing “the lamp.”

Demographics page was also included. All participants were given informed consent forms to fill out and were given a debriefing statement after the experiment.

Results

Participant’s own ability to detect change (64%) and rated other’s ability to detect change when they are asked whether or not they would have recognized the change happen (Simon & Ambinder, 2005). Participants did not overestimate their ability to detect change of something added more often than something removed. They did however support previous research studies regarding the participants overestimating their ability to detect change and underestimating others’ ability to detect change. There was only a significant effect of participants underestimating change.

After looking at other research and conducting my own, I agree with Simons and Ambinder’s 2005 study where they found the four core conclusions of change blindness. I think that in order to conduct a valid study it needs to assess all components of change blindness, and have each be a factor within the experiment, because you do need all four to be accurate.

In everyday life, changes occur everywhere we look, but in order to point out and mentally process these changes we must pay attention. The present study was not in a distraction free environment, which could have caused some participants difficulty while watching the slideshow. Even though this could be a limitation, everyday life is not a distraction free environment.

Discussion

• The results of the present study did not support the previous findings such that participants did not detect change of something added more often than something removed. They did however support previous research studies regarding the participants overestimating their ability to detect change and underestimating others’ ability to detect change. There was only a significant effect of participants underestimating change.

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• Participants flipped back and forth till they saw the change. This helps eliminate participants guessing what kind of change occurred.

• When analyzing my data, I disregarded the written down responses of what exactly changed because there was a lot of missing data. Only analyzing the checked answers could have affected the results due to participants guessing.

Hypotheses

• The present study tested the effects of change blindness and the flicker paradigm on individuals’ ability to detect change (when something is added, removed, or neither in an image). It also assessed how individuals viewed their own and others’ ability to detect these changes. It was predicted that:

   - There would be a main effect of the detection of change in an image such that the participants would be more likely to recognize when something is added than when something is removed from an image.
   - Participants would be more likely to underestimate others’ ability to detect change when they are asked before viewing images.
   - Participants would be more likely to underestimate others’ ability to detect change compared to their self ratings.

• In an experiment by Cole, Kentridge, Heywood (2004) participants looked at images of shapes. They then saw an alternate image that contained either one extra object or one less object. They found that 79% of their participants responded correctly to an object being added while only 71% responded correctly to an object being removed. Throughout all of their experiments they found that objects that were added are more likely to be detected than objects that are removed.