Wait, What Changed?
Investigating Familiarity's Role in Choice Blindness
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Overview

Choice blindness describes the finding that individuals often fail to notice when their choice is swapped out for another option. For example, in the choice below, the participant chooses the left option (panel A), but is then asked to explain why they chose the opposite picture (panel C). In this type of experiment, 60-80% of switches go unnoticed—that is, people are choice blind (Johansson et al., 2014). These results have been replicated with different types of choices ranging from pictures of faces (Johansson et al., 2014), to jam flavors (Hall et al., 2010), to political opinions (Hall et al., 2013). Although the phenomenon is consistently shown, many questions remain about how and why choice blindness happens, and what factors moderate the effect. One possible factor that has not been studied in a choice blindness experiment is familiarity.

In this study, familiarity was operationalized as brief past exposure to specific choice stimuli. The research question was whether this familiarity led to lower rates of choice blindness.

Methodology

This study:

* Manipulated familiarity within-subjects
* Used novel abstract designs as stimuli for a computerized binary choice task
* Developed a "pilot study" cover story to encourage concurrent detection reporting

A familiarization task introduced half of the choice stimuli to participants (Figure 1). The decision-making task (Figures 2-3) consisted of 18 choices. Three studied "familiar" trials (Figure 2) and three unstudied "unfamiliar" trials (Figure 3) were randomly selected to be choice blind trials. On these trials, after making a choice, the wrong picture was presented with the question, "why did you choose this picture?" Participants were considered choice blind if they failed to notice the manipulation on a choice blind trial. As a cover story, participants were told that they were helping to test-run an experiment and were asked to note on a piece of paper if they noticed any misspellings, confusing instructions, computer malfunctions or other problems with the experiment.

Figure 1: Familiarization task

Figure 2: Familiar control trial

Choice between familiar alternatives | Participant chooses right picture | Participant asked to explain choice

Figure 3: Unfamiliar choice blind trial

Choice between unfamiliar alternatives | Participant chooses left picture | Participant asked to explain unchosen picture

Results

Results showed a surprisingly low overall choice blindness rate of 33%, meaning that participants noticed 2/3rds of the picture switches. The distribution of choice blindness among participants was also unusual in that over half of participants were never choice blind while 1/5 of participants were choice blind for every manipulated trial. A multinomial chi square test found no difference in choice blindness patterns between familiar and unfamiliar trials, x^2 (3, N = 25) = 2.98, p = .395.
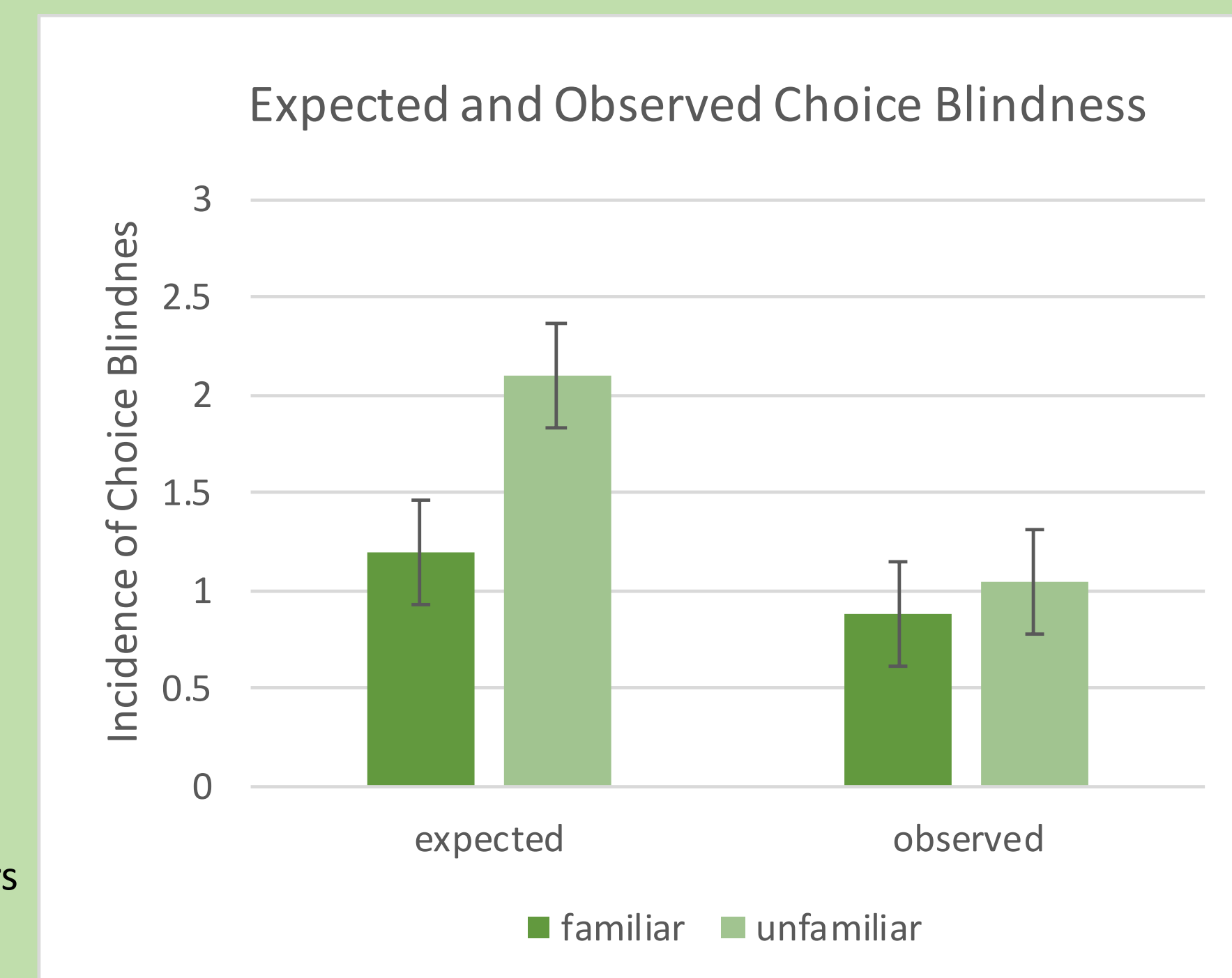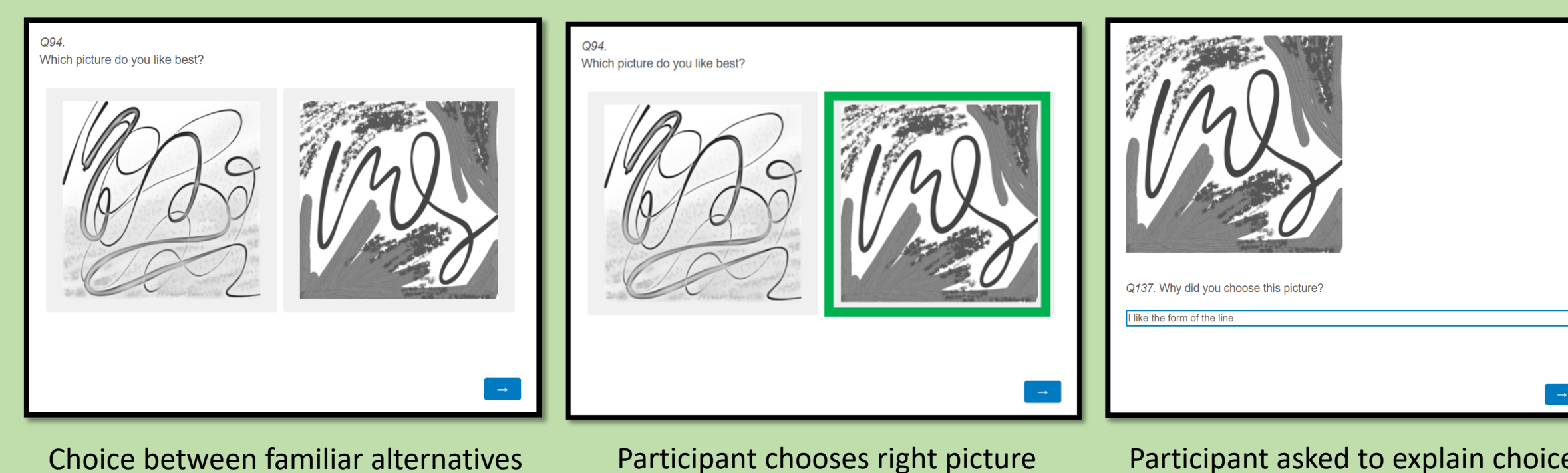

Figure 4: (right) expected and observed mean incidence of choice blindness, of 3 possible for familiar and unfamiliar conditions. Error bars represent one standard deviation from the mean
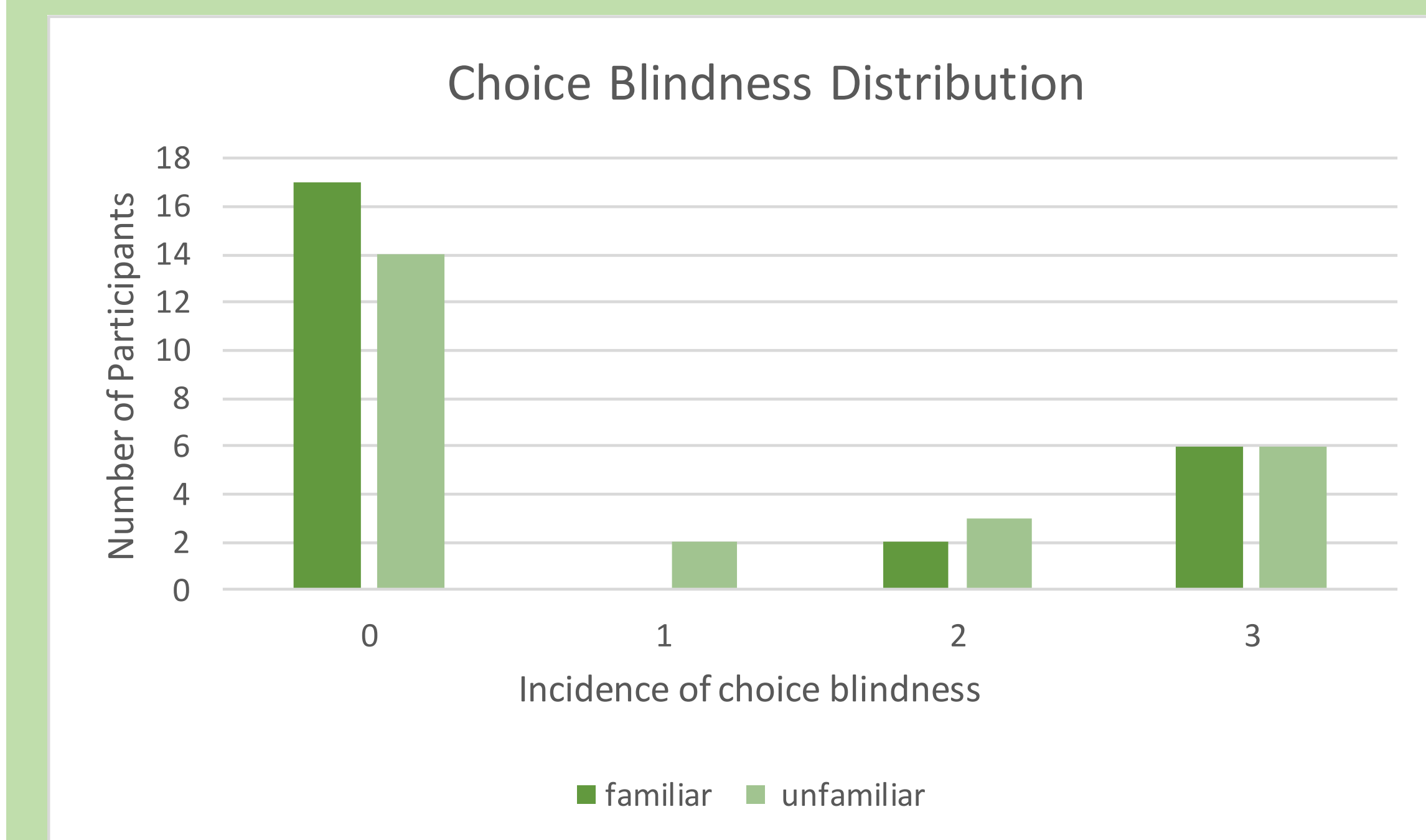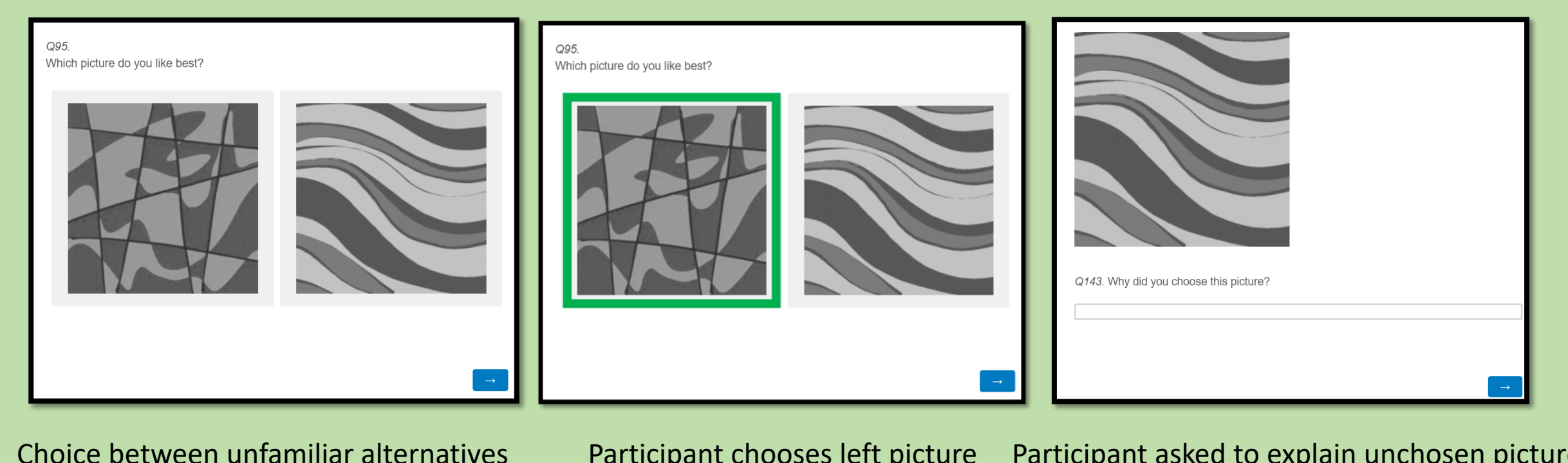

Figure 5: (left) observed distribution of choice blindness incidence where 0 = never choice blind and 3 = always choice blind

Conclusions

* The 1/3 choice blindness rate was significantly lower that past studies, perhaps due to unique design features like unlimited choice-making time, immediate explanation requirements, or the novel stimuli and cover story
* No moderating effect of familiarity was shown
* The pilot study cover story may have increased concurrent detection but may also have moderated choice blindness