

Abstract

One experiment investigated the memory for a familiar logo when compared to an unfamiliar logo; and the effect study condition has on recall scores and confidence judgments. Results from 110 undergraduate students suggest that recall and confidence changed by study condition. These results demonstrate how intentional study of a logo improves recall and influences confidence judgments from pre- to post-recall.

Introduction

- People are generally poor at recalling featural information of common objects like the US penny. Only 3 out of the 8 features of a penny were recalled correctly (Nickerson & Adams, 1979)
- Intentionally studying an object (i.e., a Mercury Dime) before recall increases scores immediately (~50% increase) and after 1 week delay (~30% increase) when compared with scores for the non-studied object. When retrieval conditions are kept the same, but encoding conditions are manipulated, poor recall is caused by poorly encoded information of the object being retrieved (Marmie & Healy, 2004)
- Even a highly recognizable logo from a well-known company, Apple, falls susceptible to people’s poorly encoded memory for the logo. Confidence in recalling the logo correctly changed from pre- to post-recall, participants tended to be more confident before recall than afterwards (Blake et al., 2015)
- Specific features of objects are ignored during encoding (i.e., where the mint year is on a coin), while the gross features (i.e., size and color of US coins) are remembered more (Horner & Comstock, 2005)
- Locating the nearest target object (i.e., location of the nearest fire extinguisher) and the orientation of the number pad on a telephone are some other objects researchers have used to study poor recall and recognition memory for common objects (Castel et al., 2012; Rinck, 1999)
- Current study utilizes a study vs non-study design and adds the metacognition of confidence pre- to post-recall for a familiar university logo and a completely unfamiliar university logo

Demographics

Age (years)	Mean: 19.0 SD: 1.20 Min: 18.0 Max: 25.0
Gender (percent)	Women: 67.3% Men: 31.8% Nonbinary: 0.9%
Grade (percent)	First Year: 40.9% Second Year: 38.2% Third Year: 14.5% Fourth Year: 6.4%
Ethnicity (percent)	Caucasian: 55.45% Asian: 14.55% Hispanic: 14.55% Black/African American: 4.55% Multi-racial: 4.55% Indian: 3.64% Middle Eastern: 2.73%
Athletes (percent)	Non-Athletes: 93.6% Athletes: 6.4%

Method

• Participants

- 110 undergraduate students enrolled in psychology courses

• Example Questions from Materials:

- Familiarity Questionnaire example: *Do you have the Seton Hall pirate logo on your car?*
- Confidence judgment example: *How confident are you that you will be able to draw the Willamette bearcat logo?*

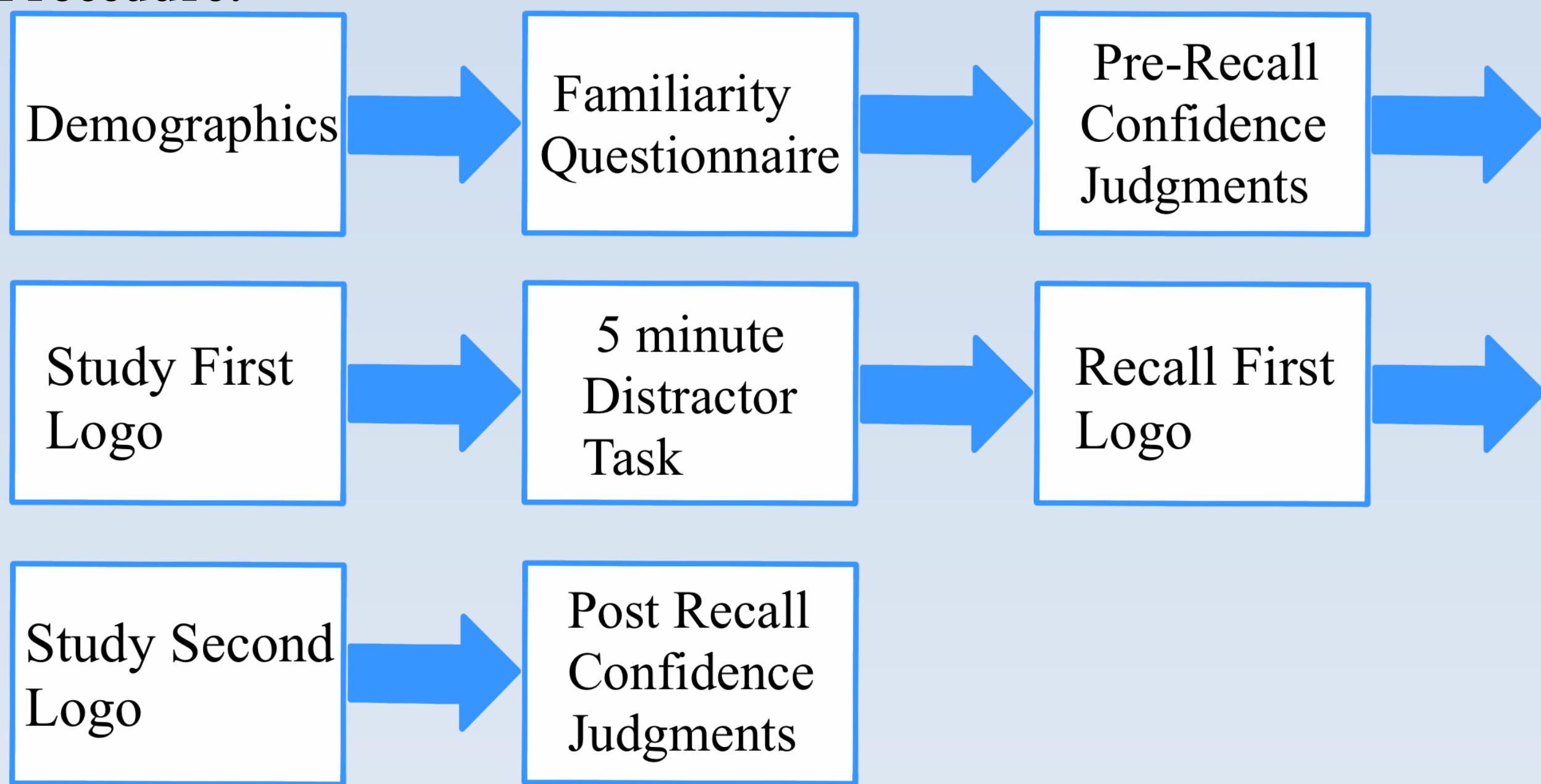
• Stimuli



Seton Hall Pirate Logo

Willamette Bearcat Logo

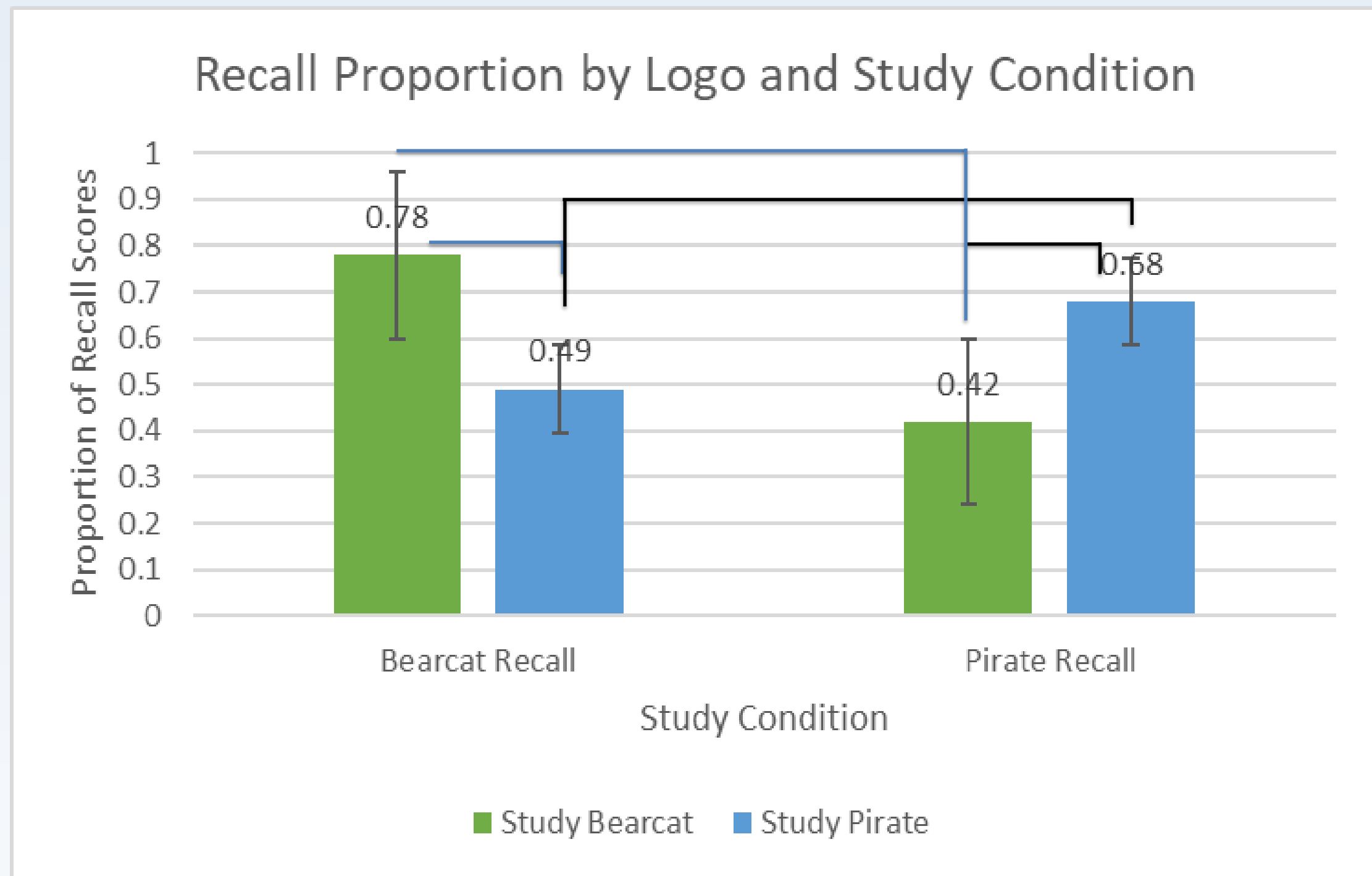
• Procedure:



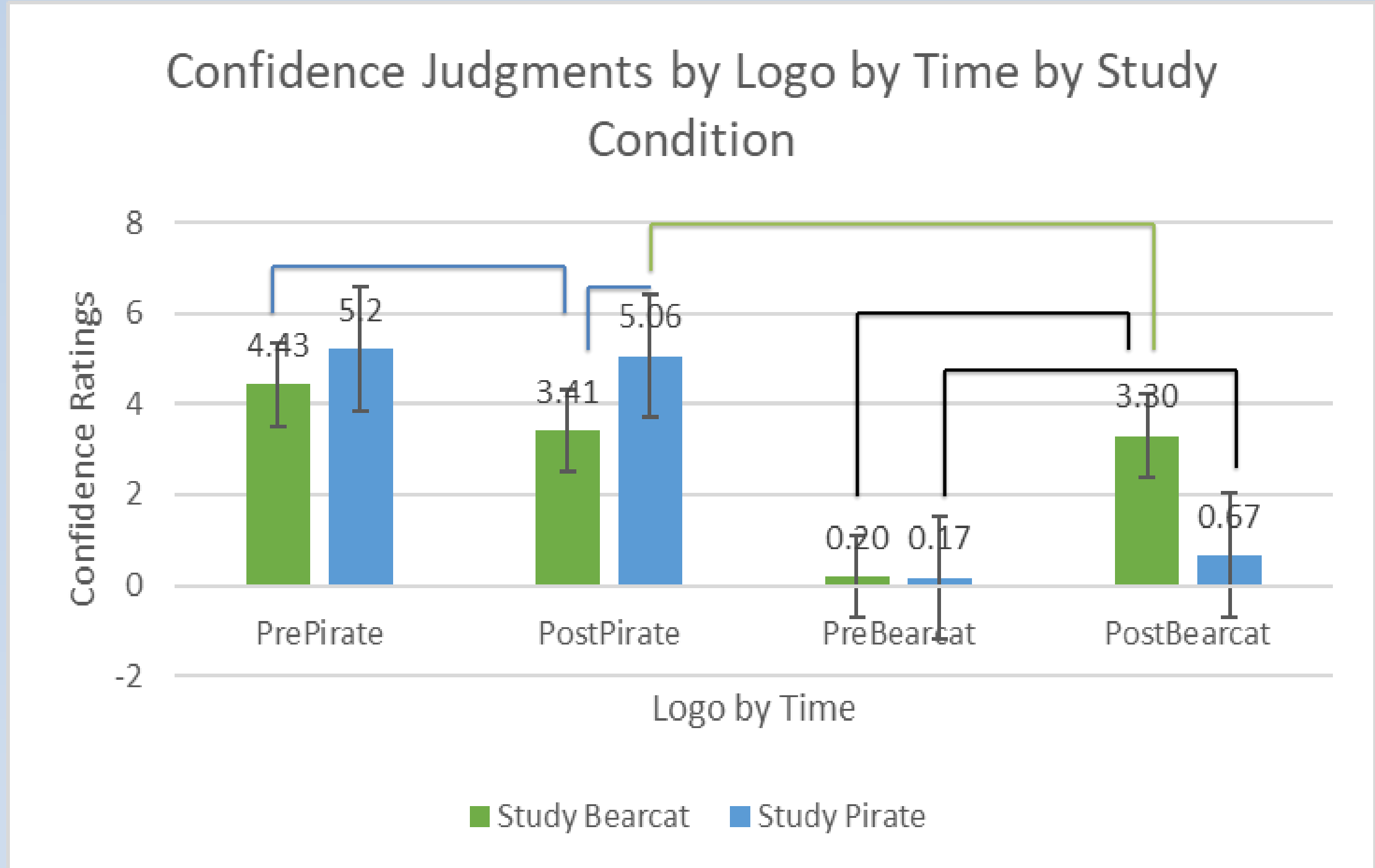
• Design:

- Recall scores were collected and analyzed as a mixed-methods 2(Logo: Pirate, Bearcat) X 2(Study Condition: Study Pirate, Study Bearcat) ANOVA
- Confidence Judgments were collected and analyzed as a mixed-methods A 2 (Logo: Pirate, Bearcat) X 2 (Time: Pre-Recall, Post-Recall) X 2 (Study Condition: Study Pirate, Study Bearcat)

Results



A 2 (Logo: Pirate, Bearcat) X 2 (Study Condition: Study Pirate, Study Bearcat) mixed methods ANOVA was conducted on recall scores. There was a main effect of logo on recall scores, $F(1, 108) = 12.0, p < .001, \eta^2 = .025$. There was no main effect of study condition on recall scores. There was an interaction between logo and study condition on recall scores, $F(1, 108) = 123.9, p < .001, \eta^2 = .255$. Post hoc comparisons using the Tukey’s HSD test indicated that the mean score for the Pirate-Study Bearcat condition ($M = 0.42, SD = 0.20$) was significantly different than the Pirate-Study Pirate condition ($M = 0.68, SD = 0.24$) and the Bearcat-Study Bearcat condition ($M = 0.78, SD = 0.23$). There was also a significant difference between the Pirate-Study Pirate condition and the Bearcat-Study Pirate condition ($M = 0.49, SD = 0.26$). Also, there was a significant difference between the Bearcat-Study Bearcat condition and the Bearcat-Study Pirate condition. These scores indicate that studying a logo before recall improves recall scores.



A 2 (Logo: Pirate, Bearcat) X 2 (Time: Pre-Recall, Post-Recall) X 2 (Study Condition: Study Pirate, Study Bearcat) mixed methods ANOVA was conducted on participants’ confidence judgments. There was an interaction between logo, time, and study condition on confidence judgments, $F(1, 108) = 29.07, p < .001, \eta^2 = .024$. Confidence judgments from pre- ($M = 4.43$) to post-recall ($M = 3.41$) for the unstudied Pirate logo had a significant decrease, while there was no significant change from pre- ($M = 5.2$) to post-recall ($M = 5.06$) for the studied Pirate logo. There was a significant increase in confidence scores for the studied Bearcat logo from pre- ($M = 0.20$) to post-recall ($M = 3.30$), and there was a significant increase in confidence for the unstudied Bearcat logo from pre- ($M = 0.17$) to post-recall ($M = 0.67$). Post-recall confidence scores for the Bearcat logo had a significant change depending if participants were able to study it or not (confidence higher for study than non-study). Also, there was a significant comparison between the post-recall confidence scores for the studied Pirate logo and the studied Bearcat logo (confidence scores were higher for the Pirate logo than the Bearcat logo).

Conclusions

- Studying improves recall scores (Marmie & Healy, 2004) especially when it is unfamiliar
- Parallel Distributing Processing model explains why certain features are recalled more and why scores are still low (as cited in Horner & Comstock, 2005)
- Confidence decreased from pre- to post-recall for the familiar pirate logo (Blake, Nazarian, & Castel, 2015)
- Confidence increased from pre- to post-recall for the unfamiliar bearcat logo, which differs from prior research
- These results demonstrate how intentional study of a logo improves recall and influences confidence judgments from pre- to post-recall

References

- Blake, A. B., Nazarian, M., & Castel, A. D. (2015). The Apple of the mind’s eye: Everyday attention, metamemory, and reconstructive memory for the Apple logo. *Quarterly Journal of Experimental Psychology*, 68(5), 858–865. <https://doi.org/10.1080/17470218.2014.1002798>
- Castel, A. D., Vendetti, M., & Holyoak, K. J. (2012). Fire drill: Inattention blindness and amnesia for the location of fire extinguishers. *Attention, Perception, & Psychophysics*, 74(7), 1391–1396. <https://doi.org/10.3758/s13414-012-0355-3>
- Horner, J. M., & Comstock, S. P. (2005). What are the important visual features for coin discrimination? *Applied Cognitive Psychology*, 19(9), 1211–1218. <https://doi.org/10.1002/acp.1161>
- Marmie, W. R., & Healy, A. F. (2004). Memory for Common Objects: Brief Intentional Study is Sufficient to Overcome Poor Recall of US Coin Features. *Applied Cognitive Psychology*, 18(4), 445–453. <https://doi.org/10.1002/acp.994>
- Nickerson, R. S., & Adams, M. J. (1979). Long-term memory for a common object. *Cognitive Psychology*, 11(3), 287–307. [https://doi.org/10.1016/0010-0285\(79\)90013-6](https://doi.org/10.1016/0010-0285(79)90013-6)
- Rinck, M. (1999). Memory for everyday objects: Where are the digits on numerical keypads? *Applied Cognitive Psychology*, 13(4), 329–350. [https://doi.org/10.1002/\(SICI\)1099-0720\(199908\)13:4<329::AID-ACP583>3.0.CO;2-3](https://doi.org/10.1002/(SICI)1099-0720(199908)13:4<329::AID-ACP583>3.0.CO;2-3)