The Effects of Visual Priming on a Word Search Task

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Abstract

Our study examined the effects of visual priming on a simple word search task. 40 participants in Wilmington, NC were selected through a convenience sample. All participants completed a word search task. Participants in the experimental condition completed the word search after being presented with a slideshow of 10 images (priming stimuli). The control participants just sat in silence preceding the word search. The word search included 10 animals words to match the photos as well as 10 non-animal words that were purposefully selected by us. Participants had 2 minutes to find as many words as they could. There were no significant differences in the number of animal words and non-animal words found between the conditions, however, there was a significant difference between the number of “other” words found between groups. Perhaps the priming limited the visual processing of “other” words.

Introduction

Priming is the process of introducing a stimulus to subjects before administering a task. Stimuli can take multiple forms such as images, words, or scents. The introduction of the stimuli creates a memory effect that allows the source stimuli to be more easily identified.

Previous studies

Basile & Hampton (2013)

Bushman (2018)

Grigor & Van Toller (1999)

Hyman, Boss, Wise, Mckenzie, & Caggiano (2010)

Hypothesis

The primed participants in the experimental condition will find more animal words in the word search than non-primed participants in the control condition.

Method

- Participants
  - Sample of convenience
  - 40 participants, 26 females and 14 males
  - Age range = 18 to 63 with a mean of 27.03 (SD= 13.92)
- Materials
  - Booklet of 10 animal photos (dog, monkey, rabbit, tiger, bird, turtle, snake, mouse, horse, cat)
  - A coin (to randomly assign control or experimental condition)
  - Word search generated on an online word search maker
    - We programmed in the 10 animal words and 10 non-animal words (water, hat, egg, boat, table, child, mirror, bottle, class, laptop)
  - Writing utensil
  - Timer

Method

- Procedure
  - Control Group:
    - Sit quietly for 30 seconds
    - Look through word search for 2 minutes and circle as many words as they can find
  - Experimental Group:
    - Look through booklet of animal photos for 30 seconds
    - Look through word search for 2 minutes and circle as many words as they can find
  - Researcher recorded how many animal, non-animal, and other random words each participant found
- Data Analysis
  - Independent samples t test

Results

Animal Words:

Control Group:

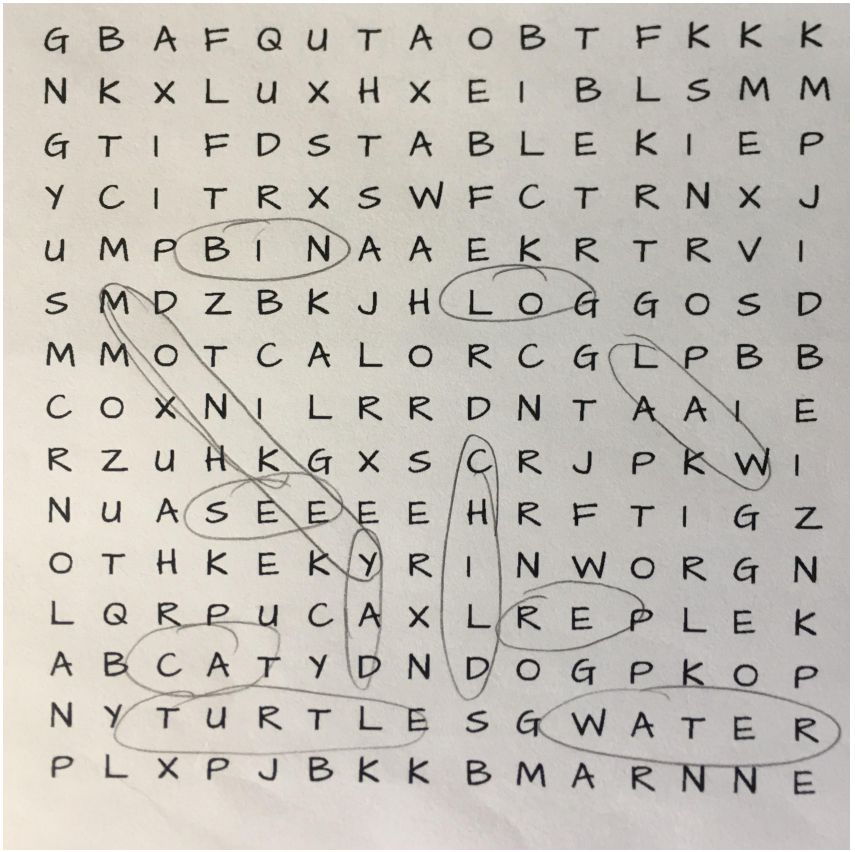
M = 2.89, SD = .994

Experimental Group:

M = 3.24, SD = 1.338

t (38) = -.913, p > .05

Sample:



Results

Non-Animal Words:

Control Group:

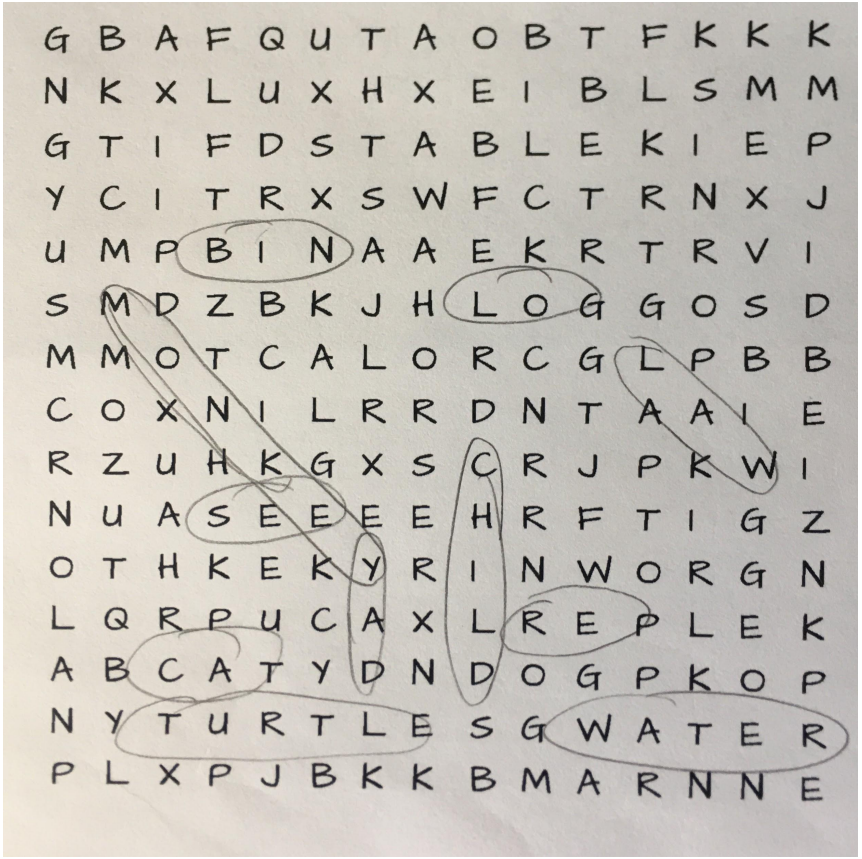
M = 1.84, SD = 1.119

Experimental Group:

M = 1.76, SD = .831

$t(38) = .259$, $p > .05$

Sample:



Results

Other Words:

Control Group:

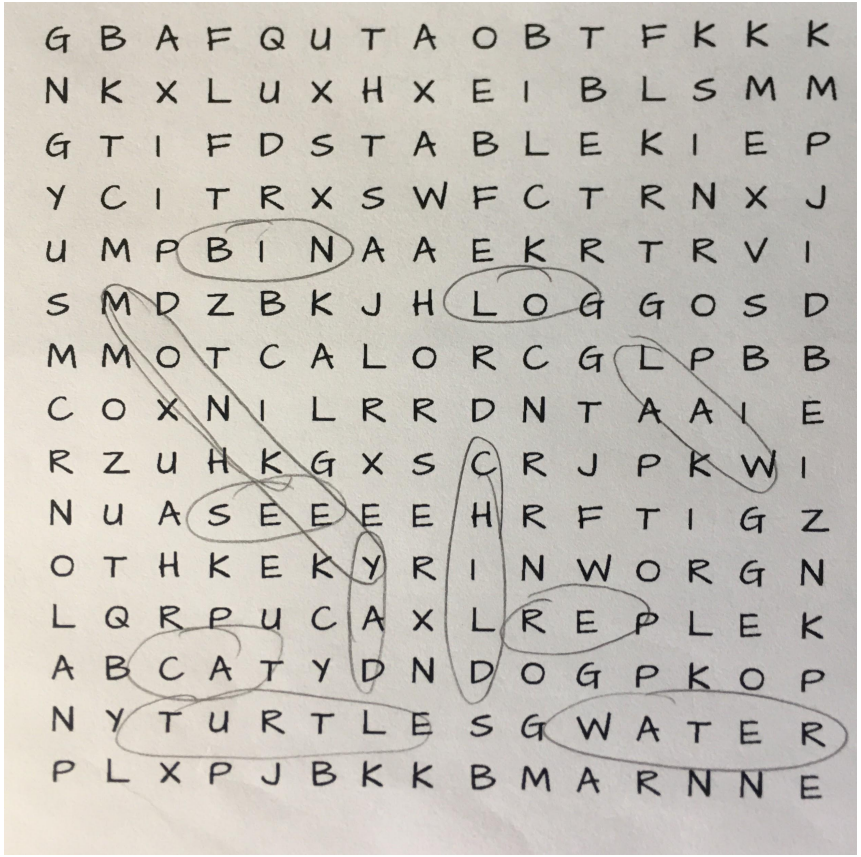
M = 4.58, SD = 2.479

Experimental Group:

M = 2.67, SD = 2.394

$t(38) = 2.480$, $p < .05$

Sample:



Discussion

- There was no significant difference between the number of animal words or non-animal words between the experimental group and control group
- There was a significant difference between the number of “other” words found between groups
  - The control group found more “other” words than the experimental group
    - Perhaps the experimental group was so busy looking for animal words that they did not find as many “other” words as the control group?

Discussion

- Limitations
  - Convenience sample- may not be representative of the general population
  - Confounding variables associated with the word search generator:
    - The generator created words that we did not purposefully include- resulted in an “other” category
    - The generator included words that participants might have associated with animals such as “zoo” and “stable”
    - The generator placed some words in ways that may have been easier to find than others
  - Participants were only given 2 minutes- less data than if given more time

Discussion

- Future research
  - Visual priming could be studied with activities other than word search (i.e. crossword puzzles, categorization activities, etc.)
    - An activity with less confounding variables than a word search may yield significant effects
  - Visual priming could be studied using methods other than photos (i.e. stories, questions, etc.)
    - Some methods may be better at producing a priming effect than others
  - Content

References

Basile, B. M. & Hampton, R. R. (2013). Monkeys show recognition without priming in a classification task. *Behavioural Processes*, *93*, 50-61.

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Hyman Jr, I. E., Boss, S. M., Wise, B. M., Mckenzie, K. E., & Caggiano, J. M. (2010). Did you see the unicycling clown? Inattentional blindness while walking and talking on a cell phone. *Applied Cognitive Psychology, 24*(5), 597-607.