Detecting the Snake in the Grass

Attention to Fear-Relevant Stimuli by Adults and Young Children

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Abstract & Introduction

One of the most common fear of phobia is snakes.

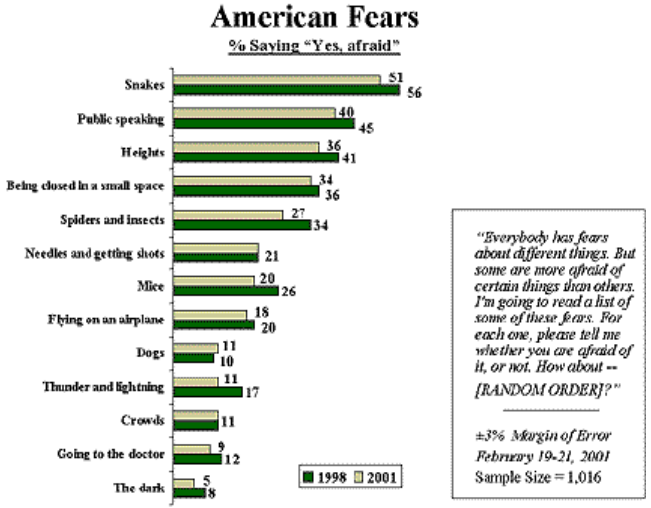
56% of adults as of 2001 according to www.gallup.com

Is this an evolved predisposition to being afraid of snakes or is it something we learn throughout our lives?

A theory is that snakes are such a common fear because of their recurrent threat to survival.

This theory suggests that those who feared snakes ha a higher survival and reproduction rate which passed their genes on.

Evolved fear module



Intro cont'd.

Studies about primates

Monkeys showed a fearful response to snakes after being exposed to another monkey showing a fearful response.

Based on this research, the evolved fear module was proposed.

Ohman & Mineka, 2001

Studies about humans

Adults were asked to find snakes (fear relevant) among flowers (fear irrelevant).

Those with a fear detected the snakes faster than those without a fear.

Ohman, Flykt, and Esteves (2001)

General Methods

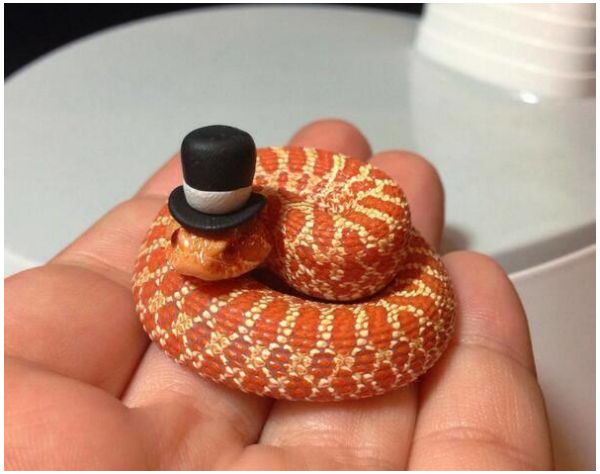
Outline: For all of the experiments the preschool children and the adults were presented with 3x3 matrices consisting of color photographs of threat-relevant and threat-irrelevant stimuli. Both adults and children were asked to identify the 1 threat-relevant stimuli among 8 other threat-irrelevant stimuli

Participants: The participants included 120 preschool aged children and 120 accompanying parents. The preschool aged children were evenly split between boys and girls and all the parents were females except 5 being males.

Materials: For each experiment there were 24 photographs for each stimulus category. The stimulus categories were snakes, flowers, frogs, and caterpillars. A MultiSync LCD 2010X color touch-screen monitor was used to present each 3x3 picture matrix on a 61-cm (24-in.) screen, such as the one shown to the right. In front of the monitor was an outline of the child's hand prints.

General Methods Con't

Procedure: The child is seated in front of the touch screen with their hands places on the handprint outline, to ensure their hands were in the same position at the start of each trial and collect reliable latency data. The child then is taught how to use the touch screen with 7 practice trials. 24 Test trials commenced, with a different picture matrix, with 1 target and 8 distractors. In between each trial there was a big smiley face that was meant to grab the child's attention to ensure they were ready for the next trial. Latency was automatically recorded when the child touched the screen. After the child completed all 24 trials, their parent was tested in the exact same way.



Analyses: They used a 2x2x2 ANOVA table. All factors were between subjects.

Experiment 1

Outline: The participants were told to either detect the snake among flowers(distractors) or a flower among snakes(distractors). Predicted that adults would be quicker at detecting snakes than flowers.

Question: Would children show the same results?

Participants: 24 3-year olds, 24 4-year olds, 24 5-year olds, and their parents (72). **3 3-year olds were excluded because they did not follow directions**

Results/Discussion: Adults were faster than children, and faster at finding the snake among flowers. (As seen in past studies→ Reliable)

Children's results combined Children's performance was similar to their adults; located the snake quicker than the flower. → Children detect threat-relevant stimuli quicker than threat-irrelevant relevant stimuli.

Past exposure to snakes had no effect on child's performance.

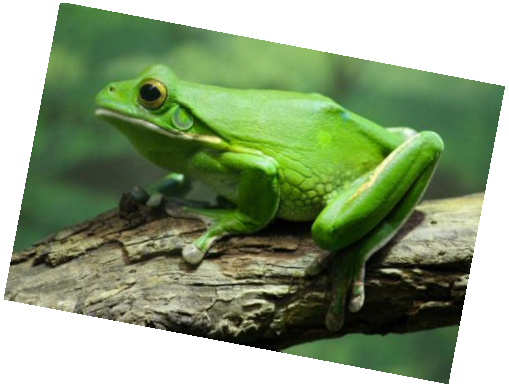
Experiment 2

Looked at the detection of snakes vs. frogs

Because of the similarity of the two creatures, this could better test the bias for the detection of threat-relevant stimuli

Participants: 24 3-year-olds, and their 24 parents; 2 additional children were excluded for failing to follow the directions

15 of the children (or 63%) were reported to have had prior experience with snakes

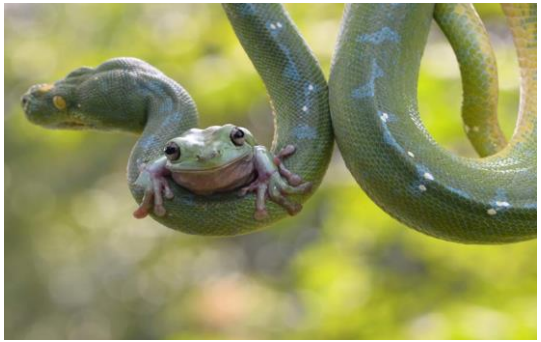


Experiment 2 Results & Discussion

Results:

- Consistent with the results of Experiment 1
  - Both the children and the adults detected the presence of snakes (threat-relevant stimuli) more quickly than the presence of frogs (non-threat stimuli)
  - The adults were quicker to respond
  - There was no effect of prior experience with snakes

Shows very strong support for a detection bias for snakes



Experiment 3

More stringent test of threat-detection bias

Caterpillar used as non-threat-relevant stimulus category

- Brightly colored
- Similar shape

Participants: 24 3-year-olds, along with their parents (24) [3 3-year-olds excluded for owing directions]

17 out of 22 of the children had prior experience with snakes (based on parent's response)

Experiment 3 results

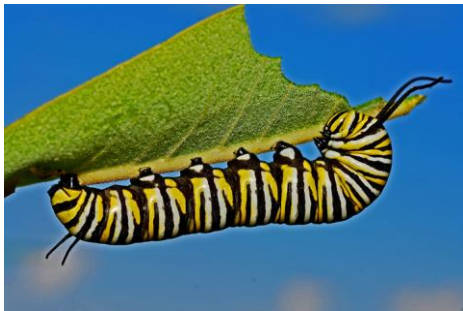
-Similar to experiments 1 & 2: adults generally respond more rapidly

-Both age groups detected snakes more rapidly than caterpillars

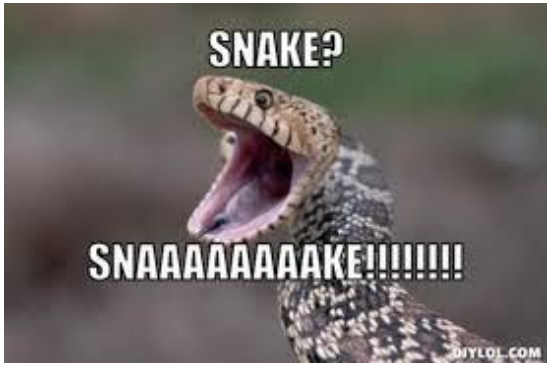
-Difference from previous results: Significant difference for children only in latency (delay) for responding to snakes versus caterpillars

-Found that children detect threat relevant items faster than threat non-relevant

-Result suggests detection of snakes is based on their unique features



Conclusion



The results of these three experiments show that just like adults, children can detect snakes faster. Children also show the same pattern with the three other types of threat-irrelevant stimuli (flower, frog, and caterpillar).

This is consistent with the evolved fear module

Bibliography

LoBue, V., & DeLoache, J. S. (n.d.). Detecting the Snake in the Grass: Attention to Fear-Relevant Stimuli by Adults and Young Children. *Psychological Science, 19*(3), 284-292. Retrieved January 11, 2017.