Detecting the Snake in the Grass
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Abstract

We all to some degree understand most people have a fear of snakes. Is this a learned fear or something that is an example of prepared learning?

This study looks at three different experiments to see if small children have the same apprehension of snakes as adults do. It is a continuous addition in research to the Öhman study.

Introduction

Öhman Theory: "The evolutionary claim is that individuals who more rapidly detected the stimulus attributes signifying the presence of a poisonous snake or a spider would have been more likely to escape the danger and hence to survive and reproduce."(1993; Öhman & Mineka, 2001)

Primates: There has been an abundant amount of research that shows that other species also fear similar associations as humans. The threat of snakes was a problem to reproduction until mammals started avoiding them in effort to reproduce more. The results were proficient and this evolved to prepared learning.

Prepared Learning: The explanation as to why some associations are adapted more quickly than others due to being predisposed from another figure.

General method
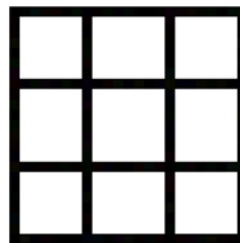
to five year-old children along with their 120 parents.

Materials: 24 photographs were used. On each trial 9 photos were used in a 3X3 fashion with one target picture. A touch-screen monitor was used to present pictures.

Procedure: A child was seated in front of the monitor and trained how to use the system. Once the children learned how to touch their target, they were presented with a series of 3X3 picture frames with one target and eight distracting pictures. Parents followed same procedure.

Experiment 1

The pictures in this experiment looked at snakes versus flowers.

The participants in this first experiment were 24, 3-5 year olds and their parents. 55 of the 120 children in the experiment had some experience with being around or knowing of snakes.

Results

Overall both the parents and the children were able to locate the snake among the flowers vs the flower among the snakes.

Even if the child had prior knowledge of snakes, it did not affect the overall results.

Experiment 2

The pictures in this experiment consist of snakes versus frogs.

Frogs resemble snakes in many ways such as: pattern, texture and colors.

Participants: 24- 3 year olds along with their 24 parents.

__Results__

These are similar to the results of Experiment 1.

The adults located the threat-relevant stimuli faster than the children however both groups located the threat (snake) faster than the non-threat (frog).

In addition, it provides a strong support to the detection bias of snakes due to the frog being a living creature. Due to the snake still being the higher threat.

Experiment 3

The pictures were caterpillars for the non-threat/distraction with the threat picture of snakes.

Participants: As with experiment two, this final experiment used 24 three year-olds and their parents.

Results

This experiment has similar results as experiment one and two.

Adults responded more quickly than children; however, children and adults detect threat-relevant targets more quickly than non-threat targets.
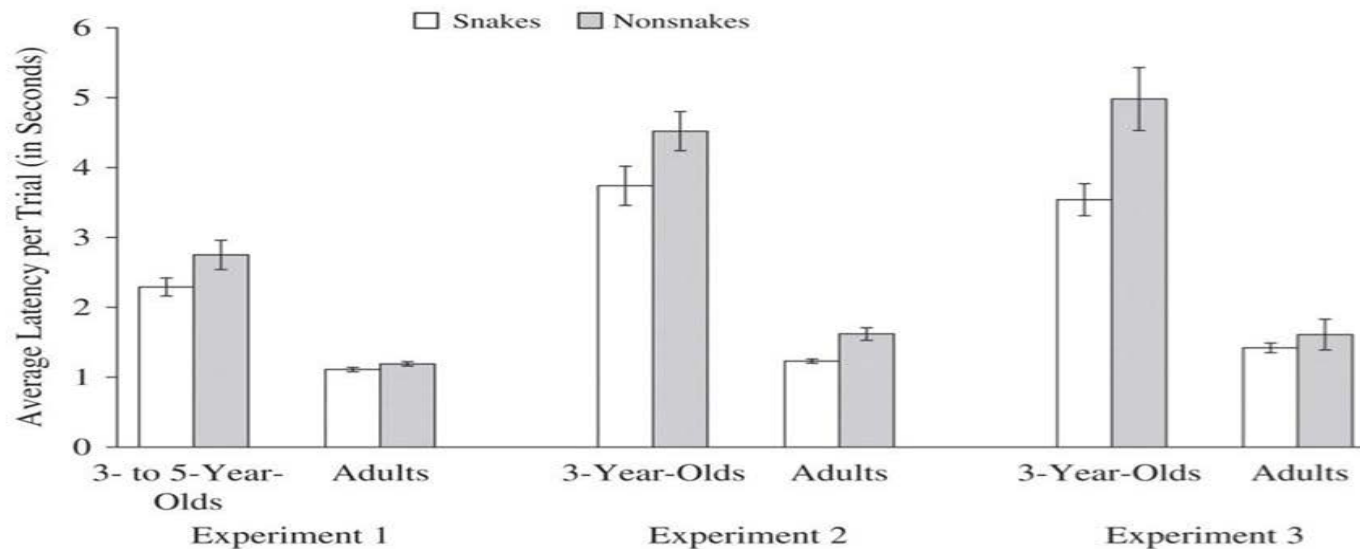
Fig. 2. Average latency to detect target stimuli (snakes vs. nonsnakes) among adult and child participants in Experiments 1 through 3.

Discussion

- The results suggest that we are aware of the bias toward relevant threat stimuli early in life. The results showed that the children detected snakes more quickly than the three non-threatening stimuli, just like their parents.
- There was a control experiment that compared detection from the two non-threatening stimuli,frogs and the flowers, to check if there was a bias over for one of the categories. These results were null.
- In all three studies, the children detected the threat stimuli significantly faster than the non-threatening, while the adults in ⅔ of the studies did the same
- A strength of the experiment comes from the 2nd and 3rd experiment. Previous visual search studies, the threatening and non-threatening stimuli differed in term of dimensions(spiders v mushrooms). Since the last two are similar, it provides a strong test for detection bias.

Limitations

- One Limitation of the study is that snakes have special features that are easily detectable to humans. Snakes slither and have long, limbless bodies that are able to coil up.This could have led to faster detection.
- Another limitation is that when we do a visual scan, we can easily detect something that is curved, rather than rectangular, because the curved object will "pop out" more

<u>References</u>

DeLoache, J. S., & LoBue, V. (2007). Detecting the Snake in the Grass: Attention to Fear Relevant Stimuli by Adults and Young Children. *19*(3).

O¨hman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. Journal of Experimental Psychology: General, 130, 466–478