

## Experiment 11: Stimulus Fear Relevancy and Vicarious Learning

### Procedure and measures:

Experiment 11 investigated whether vicarious fear learning was greater (i.e. larger increases in fear beliefs or avoidance preferences) for animals of higher fear-relevance (snakes) than other animals (worms and Australian marsupials). Children first completed the nature reserve task and fear beliefs questionnaire to determine fear beliefs and avoidance preferences for three types of stimuli of varying fear relevance: two types of snake (keelback and boomslang snakes), two types of types of worm (*Lumbricus rubellus* and *Allolobophora Chlorotica*) and two types of Australian marsupial (Quoll and Cuscus). Children were allocated to one of three CS fear-relevancy groups: snake (high fear-relevance), worm or marsupial (lower fear-relevance). Children in each group observed Askew and Field's (2007) vicarious learning procedure for their two animals (snake, worm or marsupial). Fear beliefs and avoidance preferences were then measured for a second time to determine if they had increased for animals seen in vicarious fear-learning trials.

### 1. Fear Beliefs Questionnaire1 (FBQ1)

Children filled in a computer-based fear beliefs questionnaire to measure fear-related beliefs for the two animals. The questionnaire contained seven questions for each animal; for example, "Would you be scared if you saw a quokka?" and "Would you be happy to have a cuscus for a pet?" Children responded on a 5-point Likert scale: 0 (*No, not at all*), 1 (*No, not really*), 2 (*Don't know/Neither*), 3 (*Yes, probably*), and 4 (*Yes, definitely*). There were a total of 14 questions. Mean fear beliefs scores for each animal was calculated for each child.

### 2. Nature Reserve Task (NRT1)

Children were first asked to imagine that the board was a nature reserve containing one of the animal CSs. One of the animals, depicted by a photograph, was at one end of the reserve. Children are asked to place a Lego model representing themselves on the board where they would most like to be. The distance between the animal and the Lego figure was measured and indicated children's avoidance preferences for the animals. The same procedure was then repeated for the second animal. The order that animals were presented in was counterbalanced across children.

### 3. Vicarious learning (VL)

Each child was shown one Australian marsupial (e.g., a quokka) with 10 faces expressing fear ('fear-paired'), and one Australian marsupial (e.g. quoll) alone on the screen 10 times ('unpaired'). Each of the 20 trials began with a randomly chosen animal picture appearing alone on the screen for 1 s. The marsupial picture remained displayed for a further 1 s while, depending on the counterbalancing order, a scared face was simultaneously presented on the opposite side of the screen, or no face appeared and the animal remained alone. Accordingly, the total length of a single trial from start to finish was 2 s. The interval between each pairing was a random interval that varied between 2 and 4 s. The procedure was counterbalanced across children so that the animals were each paired with scared or no faces.

#### **4. NRT2**

Children completed the NRT a second time to determine whether avoidance preferences had increased or decreased as a result of the procedures.

#### **5. FBQ2**

Children completed the FBQ a second time to ascertain if fear-related beliefs for animals changed due to the procedures.