

Experiment 6: Attentional Bias Modification

Using the vicarious learning procedure developed by Askew & Field (2007), children were shown one animal (e.g., a quokka) with 10 faces expressing fear ('fear-paired') and another animal (e.g., a cuscus) alone on the screen 10 times ('unpaired'). Half of the children also received an attentional bias modification procedure designed to direct attention away from the fear-paired animal. Trait Anxiety was measured using the State-Trait Anxiety Inventory for Children (STAIC) and Multidimensional Anxiety Scale for Children-10 (MASC-10). Changes in children's fear beliefs, avoidance preferences and attentional bias for the animals was measured via questionnaire, a nature reserve task, and a dot probe task. There were three main objectives. The experiment sought to establish whether:

- 1) Vicarious learning can lead to increases in attentional bias for 'fear-paired' animals
- 2) Retraining attention can lead to reduced fear beliefs and avoidance preferences for the 'scared-paired' animal

Procedure and measures:

Children filled in two computer-based questionnaires, watched a short film clip in which female adults responded either fearfully or neutrally when asked to place their hand in a box apparently containing a novel animal (a quokka or a cuscus). Fear-related beliefs and approach/avoidance behavior for the animals were measured using a series of measures.

1. State-Trait Anxiety Inventory for Children (STAIC)

Attentional biases are known to be related to general anxiety levels. The *State-Trait Anxiety Inventory for Children* (STAIC; Spielberger, 1973) was therefore used to measure children's trait anxiety to determine whether chronic global anxiety mediates the relationship between vicarious learning and attentional biases. The scale is comprised of 20 items and children respond on a three-point Likert-type scale.

2. Multidimensional Anxiety Scale for Children – 10 (MASC-10)

The 10-item *Multidimensional Anxiety Scale for Children – 10* (MASC-10; March et al., 1997) was also used to measure children's anxiety symptoms and trait anxiety (how the child has been "thinking, feeling, or acting recently"). Children respond on a four-point Likert-type scale ('never true about me', 'rarely true about me', 'sometimes true about me', 'often true about me').

3. Nature Reserve Task (NRT)

Children were 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.

4. 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.

5. 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.

6. NRT2

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

7. FBQ2

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

7. Dot Probe Task (Attentional Bias Modification)

Control group - For the control group, the two animals (Quokka and Cuscus) were briefly presented simultaneously on the computer screen, one on the left the other on the right. The pictures disappeared to reveal a dot probe (either : or ..) ‘behind’ one of the animal pictures. Children were asked to locate the probe and response times were recorded. Two different pictures of each animal were used and counterbalanced for position (8 trials). The position of the two probes (: and ..) were counterbalanced with each of the pictures (32 trials). Each trial was presented twice creating a total of 64 trials. Before the actual trials children were given 16 practice trials with only the probes appearing on the screen (no pictures of the animals).

Attentional bias modification group - For the retraining group, the dot probe task was the same as for the control group except the probe only ever appeared behind the previously unpaired animal. This meant that children learnt to attend away from the fear-paired animal.

6. NRT3

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

7. FBQ3

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