

Is it scary mummy? Vicarious acquisition and prevention of fear in children via a mother or a stranger

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INTRODUCTION

Young infants (12-20 months) show greater fear and avoidance of a stimulus after mothers respond negatively to it (Gerull & Rapee, 2002; Dubi, Rapee, Emerton & Schniering, 2008). Learning of this fear response is inhibited following positive modelling by mothers (Egliston & Rapee, 2007).

The current study compared modelling by mothers and strangers, and examined whether children's vicariously acquired fear beliefs for animals can be unlearned ('counter-conditioning') by positive modelling. Sixty children (29 boys, 31 girls), 6-10 years ($M = 8.72$ years, $SD = 1.28$) were shown images of novel animals (CS) together with images of mothers or strangers (US) displaying negative ('scared-paired') or positive ('happy-paired') facial expressions.

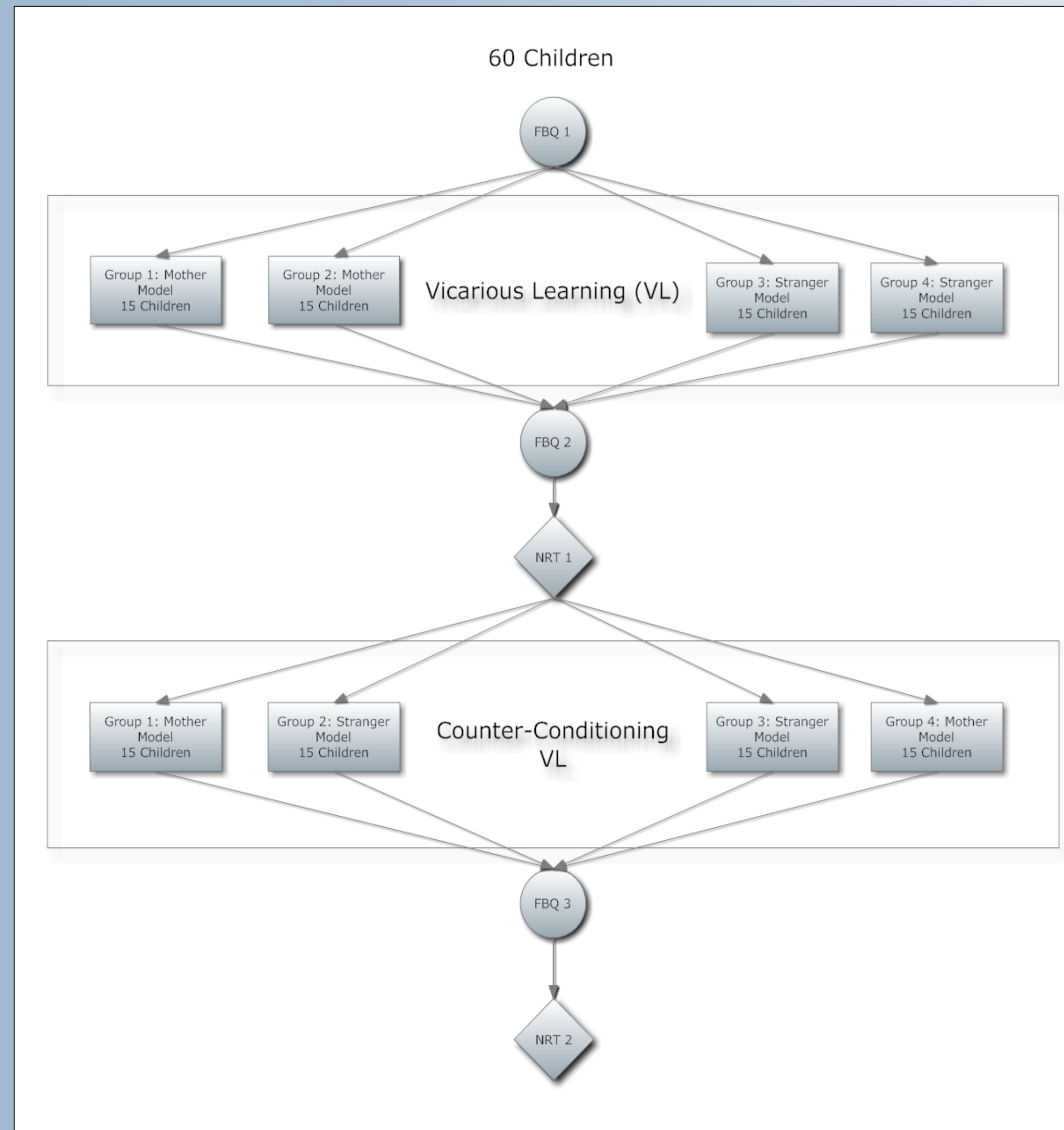
Hypotheses:

Fear-related beliefs would increase for animals presented with images of adults displaying fear. Change in fear beliefs would be more significant when animal paired with picture of their mother. Counter-conditioning would be more effective where the mother's image used instead of the stranger's.

Stimuli: CSs: Animal pictures ; USs: Scared/happy face or no face at all
Fear Beliefs Questionnaire (FBQ: Field & Lawson, 2003). The FBQ consists of 7 questions for each animal designed to measure fear beliefs, carried out: before, and after vicarious learning, and post counter-conditioning vicarious learning.

Nature Reserve Task (Field & Storksen-Coulson, 2007). A triangular wooden board designed as an indirect measure of children's avoidance/preference of the animals, carried out: after vicarious learning and counter-conditioning.

PROCEDURE



RESULTS

Fear belief scores

A three-way 3(Time: baseline, post-learning 1, and post-learning 2) x 3(Pairing type: scared, happy and none) x 4(Modelling group: MM, MS, SS, SM) mixed ANOVA was performed on fear belief scores (see Figure 1). The time x pairing type interaction was significant, $F(3.13, 175.05) = 18.54, p < .001$, indicating vicarious learning led to changes in fear beliefs dependent on the type of face presented. Planned comparisons showed a significant increase in fear beliefs after scared-pairing, $F(1, 56) = 21.58, p < .001, r = .53$, and decrease after happy-pairing, $F(1, 56) = 10.12, p < .01, r = .39$, returning to baseline levels after counter-conditioning. The group x pairing type x time interaction, $F(9.38, 175.05) = 1.04, p > .05$, was not significant indicating that there was no difference between mother and stranger modelling.

Nature Reserve Task

A three-way 2(Time: post-learning 1 vs. post-learning 2) x 3(Pairing-type: scared, happy, and none) x 4(Modelling type: MM, MS, SS, SM) mixed ANOVA was performed on NRT scores (see Figure 2). The main effect of pairing type was significant, $F(2, 112) = 10.30, p < .001$, as was the pairing type x time interaction, $F(1.71, 95.63) = 26.45, p < .001$, indicating that vicarious learning affected how far away from animals children placed themselves on the board depending on the type of face seen with an animal. Planned comparisons showed that the effect of pairing type differed over time for both scared and happy paired animals compared to the control condition. There was no significant main effect or interaction with group.

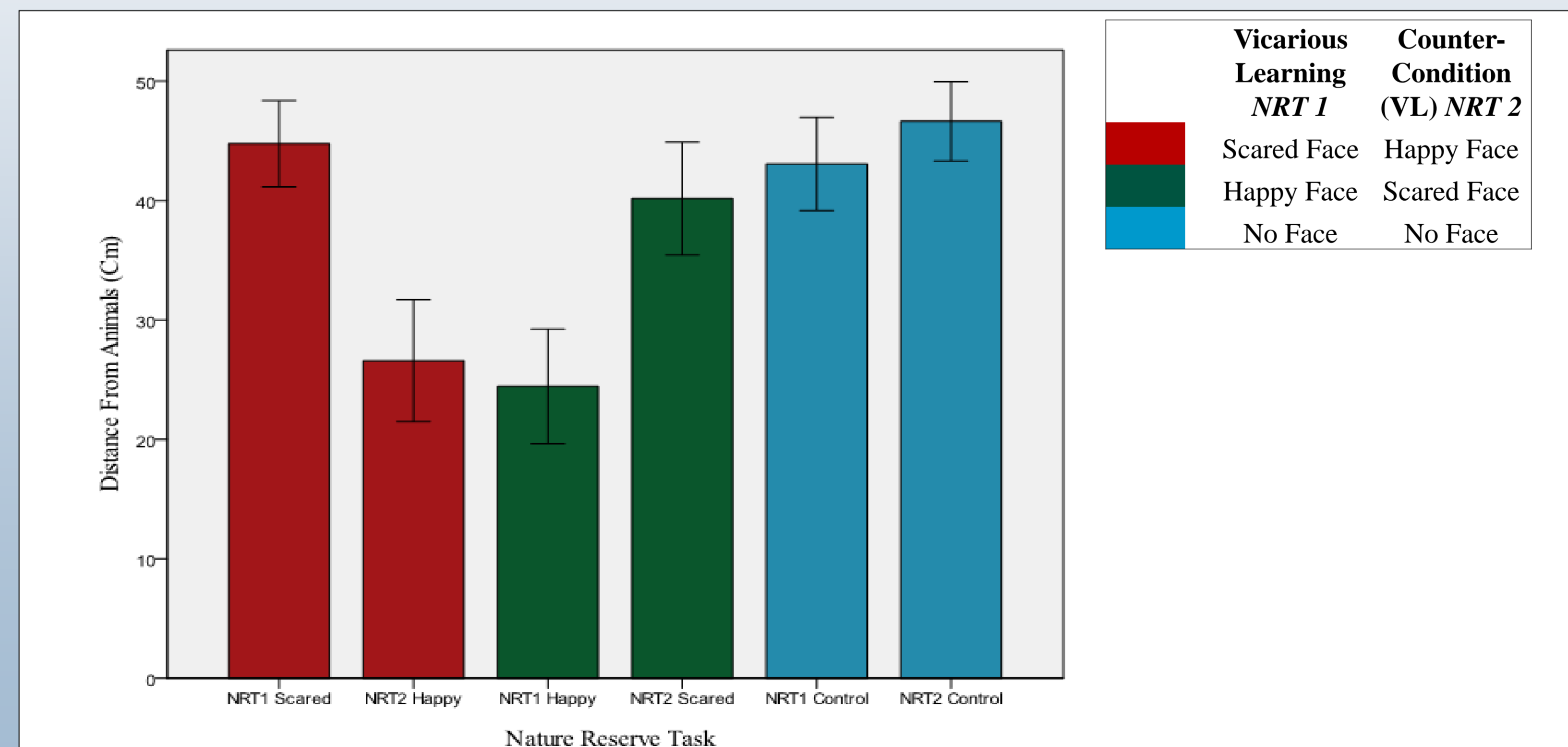


Figure 2. Graph showing mean (and SE) distance from animals (cm) in the nature reserve tasks

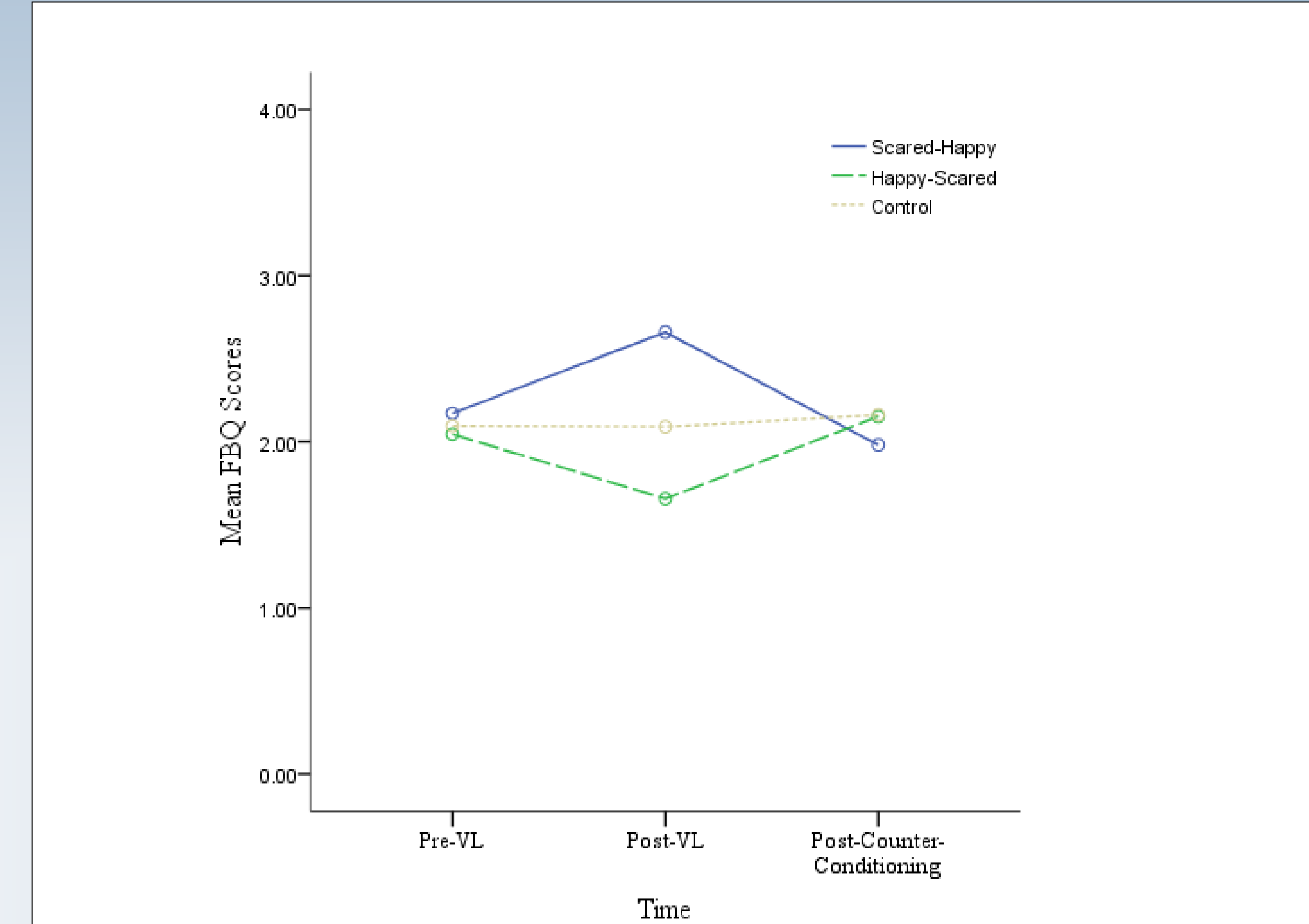


Figure 1. Graph showing the mean fear beliefs for the scared, happy and no information (control) conditions, pre- and post- the VL and post-counter-conditioning (unlearning process).

Mean (SD) for FBQ scores pre- and post- vicarious learning and post- counter-conditioning for all groups.

FBQ	Pre VL	Post VL	Post Counter-Conditioning
Scared-paired	2.17 (0.74)	2.66 (0.83)	2.15 (0.97)
Happy-paired	2.04 (0.71)	1.66 (0.90)	1.98 (1.02)
Unpaired	2.09 (0.77)	2.09 (0.96)	2.16 (0.95)

CONCLUSIONS

Findings indicate children's fear beliefs and avoidance of animals increased following fear-related vicarious learning and decreased following positive vicarious learning.

Following positive vicarious counter-conditioning (unlearning), fear beliefs that had increased due to fear-related vicarious learning returned to pre-experiment levels. Similarly, decreases in fear beliefs due to positive vicarious learning, were reversed in subsequent fear-related vicarious learning.

Children's fear beliefs increase for an animal if they see it with scared faces. However, presenting animals with happy faces before scared faces can prevent fear beliefs increasing above baseline levels. Similarly, seeing the animal with happy faces after seeing it with scared faces can return fear beliefs to baseline levels. The effect is the same whether the face is a stranger or the child's mother.

REFERENCES

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