SUMMARY OF RESEARCH RESULTS

There is now considerable evidence that phobic responding is associated with a bias towards expecting aversive or traumatic outcomes following encounters with the phobic stimulus. In terms of conditioning contingencies, this can be described as a bias towards expecting an aversive unconditioned stimulus (UCS) following a phobic conditioned stimulus (CS), and it is this expectancy bias that leads to rapid acquisition of the CS-UCS association (and hence rapid acquisition of phobic responding), and also to the apparent resistance to extinction of phobic responding in laboratory analogue studies.

Whilst recent literature supports the idea that UCS expectancy biases serve to generate and maintain phobic responding very little is known about how these biases might develop.

The present project had a number of aims: (1) to identify the nature of the UCS expectancy bias (es) evidenced by individuals with specific phobias, (2) to identify some of the factors that mediate the development of aversive outcome expectancy biases, (3) to identify ways in which CS-UCS associations underlying phobics might be acquired without the involvement of direct or vicarious conditioning experiences, (4) to provide evidence that will contribute to and extend current cognitive models and associative models of phobias, and (5) to provide a greater understanding of the processes that underlie phobia acquisitions and as a result contribute to the development of more effective therapeutic procedures.

The project completed eleven individual studies over the two year period of the grant. Unexpected findings from the first study, suggesting complex rather than unitary UCS expectancy biases in phobic participants, precipitated three further studies investigating this phenomenon.

The first study found that spider phobics both overestimate the likelihood of aversive outcomes following phobic stimuli and underestimate the likelihood of aversive outcomes following fear irrelevant stimuli in comparison to non-phobic controls. The second study confirmed this unexpected finding in relation to fear irrelevant stimuli, and suggested that this was not simply an artefact of the initial paradigm used. The third study found that spider phobics generate harm and safety beliefs about both phobic and fear irrelevant stimuli which accord with their UCS expectancy biases. The final study in this group suggested that this complex cognitive bias might be driven by overemphasis on the harm-safety evaluative dimension which making judgements about animal stimuli.

The project then turned its attention to the effect of negative mood on the development of UCS expectancy biases. One initial problem was in manipulating mood states in a reliable way. The initial study, which used a previously validated mood induction procedure failed to find appropriate changes in mood state. A second study was more successful, and indicated that both negative and positive mood states may play a role in inflating UCS expectancy ratings. In order to further understand this unexpected finding the next two studies attempted to manipulate arousal states and to measure the impact of this manipulation on UCS expectancy ratings. Neither exposure to 85dB white noise, nor exercise induced arousal had any significant impact on UCS expectancy ratings.
The final three studies in the project aimed to identify vulnerability factors for particular types of phobias. Specifically, to investigate the idea that experience of disgust might play a role in the development of UCS expectancy biases toward revulsive or disgusting animals (e.g. spiders, slugs, maggots), whilst experience of anxiety might contribute to the development of these biases in the case of fierce or predatory animals (e.g. sharks, tigers, wolves).

Thus the conclusions were that, in the experimental paradigm adopted, individuals with specific phobias evidence dichotomous UCS expectancy biases, responding differently to both phobic and FI stimuli from non-phobic individuals. Both episodes of general positive and general negative mood might contribute to the development of these UCS expectancy biases, and in the case of widely feared animals and insects, such as spiders, slugs and maggots, episodes of disgust, but not anxiety, may play a role in their development.

We have developed a provisional model to explain these effects. This is a dimensional account of the information processing biases underlying the specific phobias which draws on contemporary work into the impact of emotional state on judgement making. This model is able to explain many of the unexpected findings from the current project, as well as published findings of attentional biases in anxiety. Moreover, it provides testable predictions about how UCS expectancy biases typical of specific phobias will develop in a range of circumstances, both in the laboratory and in the real world.