

# The development and piloting of a measure of attentional bias for test anxiety



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## Background

High levels of test anxiety represent a significant threat to students' well-being and interfere with academic performance. Understanding the mechanism(s) by which test anxiety is produced is critical to understanding its effects and informing the development of interventions.

Clinical and high levels of trait anxiety are characterised by an attentional bias towards threat stimuli, however research has yet to establish if this is also the case with test anxiety.

We hypothesise that test anxious students would not show an attentional bias to threat stimuli all of the time, but would require a suitable stress situation (i.e., one emphasising evaluation threat) for such an attentional bias to manifest

## Piloting of the Attentional Bias Measure

80 undergraduate participants completed:

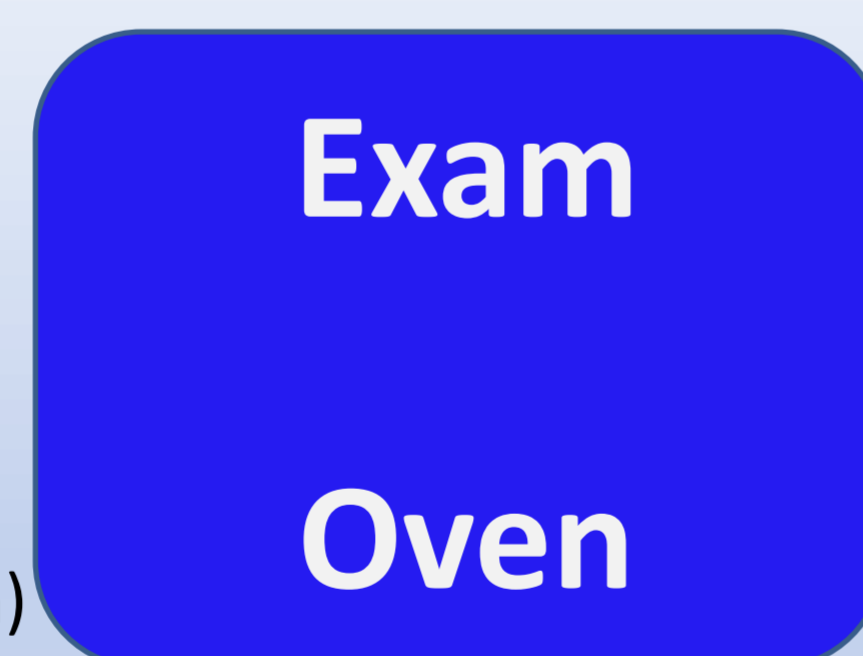
1. The *Revised Test Anxiety Questionnaire* to create groups of high and low test anxious participants at  $\pm 1$  SD.
2. The final two sets of *Ravens Progressive Matrices* (the most difficult) to create a suitable performance-evaluation situation under high and low evaluative-threat conditions. In the high evaluative-threat condition participants were told that performance was indicative of final degree grade, that it would be evaluated by departmental staff and that performances would be compared.
3. The measure of attentional bias described below.

## Development of the attentional bias protocol

1. A dot-probe task was programmed in SuperLab. A fixation cue was presented for 500ms and then the screen was cleared and followed by a 500ms interval.



2. A word pair (threat and neutral words matched on syllable length) was presented for 500ms (in total we used 30 threat and 37 neutral words to create 96 unique word pairs). Threat/ neutral words appeared with equal frequency in the top position (48 occasions each). The screen was then cleared.



3. A cue ( $\leftarrow$  or  $\rightarrow$ ) was presented behind threat/ neutral word position with equal frequency (48 occasions each) for 500ms. The arrow direction also occurred with equal frequency (48  $\leftarrow$  and 48  $\rightarrow$ ).

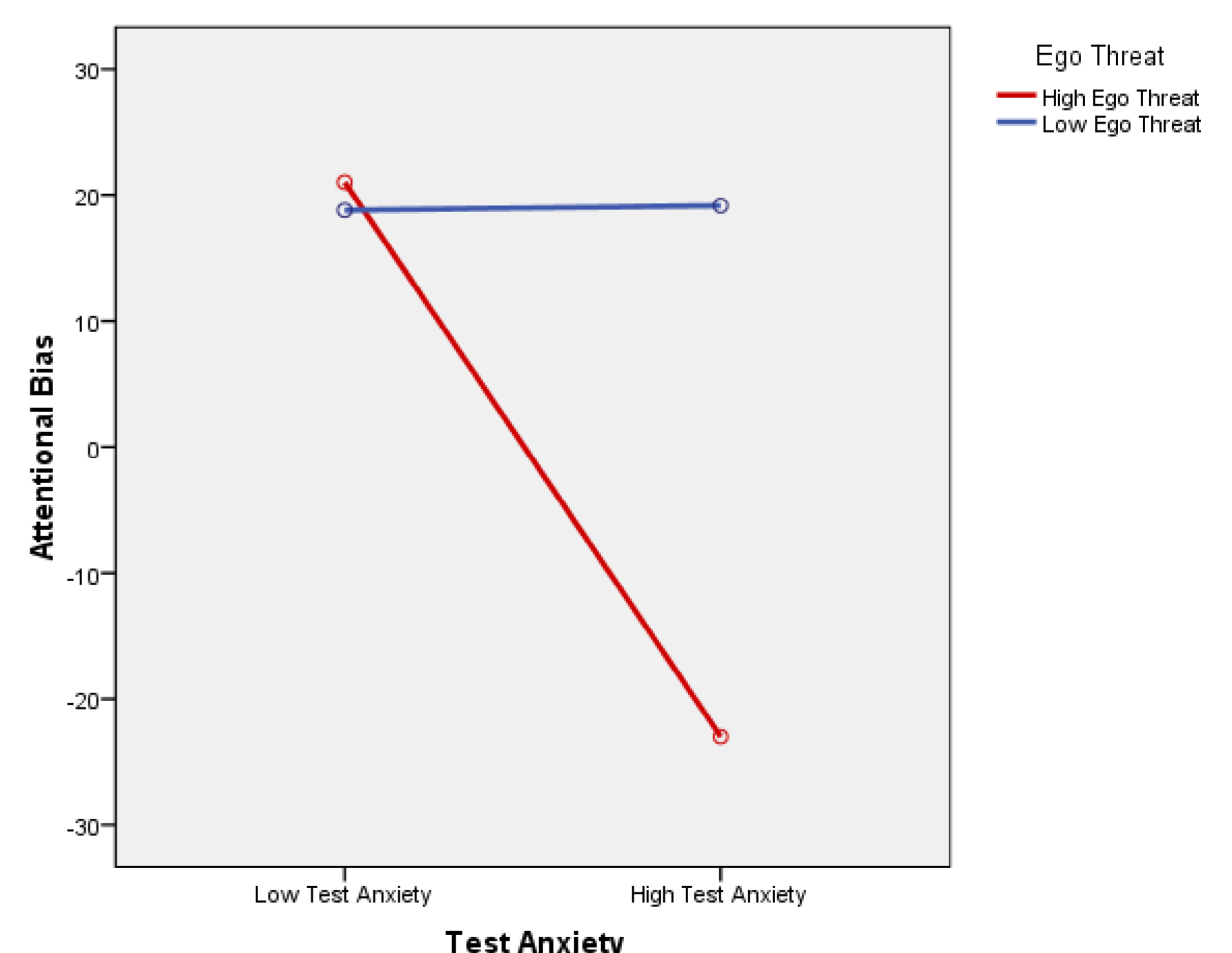


4. Participants press either the Z or M key (for left and right probes respectively) and reaction time measured. The screen was then cleared and following a 500ms interval the next word pair was presented.

## Analysis

Reaction times  $\leq 200$ ms and  $\geq 2000$ ms were deleted to account for response errors. An index score was created by subtracting reaction times for neutral words from reaction times for threat words. A neutral score (i.e. 0) would indicate no attentional bias. A faster response time (i.e., a negative score) would indicate a bias towards test anxiety threat words and a slower response time (i.e., a positive score) a bias away from test anxiety threat words.

A 2 (high vs. low test anxiety) x 2 (high vs. low ego threat) between participants ANOVA was conducted for attentional bias scores. A significant main effect was reported for test anxiety:  $F(1, 27) = 4.50, p = .04, \eta_p^2 = .12$ , a main effect approaching significance for ego-threat:  $F(1, 27) = 3.76, p = .06, \eta_p^2 = .12$  and a significant interaction:  $F(1, 27) = 4.64, p = .04, \eta_p^2 = .15$  (graphed below).



## Conclusion

Test anxious students show an attentional bias towards threat stimuli, but only under a corresponding evaluative-threat situation.