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The role of effort in moderating the anxiety – performance relationship: Testing the prediction of processing efficiency theory in simulated rally driving

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Abstract

We tested some of the key predictions of processing efficiency theory using a simulated rally driving task. Two groups of participants were classified as either dispositionally high or low anxious based on trait anxiety scores and trained on a simulated driving task. Participants then raced individually on two similar courses under counterbalanced experimental conditions designed to manipulate the level of anxiety experienced. The effort exerted on the driving tasks was assessed through self-report (RSME), psychophysiological measures (pupil dilation) and visual gaze data. Efficiency was measured in terms of efficiency of visual processing (search rate) and driving control (variability of wheel and accelerator pedal) indices. Driving performance was measured as the time taken to complete the course. As predicted, increased anxiety had a

negative effect on processing efficiency as indexed by the self-report, pupillary response and variability of gaze data. Predicted differences due to dispositional levels of anxiety were also found in the driving control and effort data. Although both groups of drivers performed worse under the threatening condition, the performance of the high trait anxious individuals was affected to a greater extent by the anxiety manipulation than the performance of the low trait anxious drivers. The findings suggest that processing efficiency theory holds promise as a theoretical framework for examining the relationship between anxiety and performance in sport.

Keywords:

- Processing efficiency
- anxiety
- visual search
- driving

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