GENERALIZED CONDITIONED SUPPRESSION IN A VIRTUAL REALITY ENVIRONMENT: A TRANSLATIONAL STUDY OF ANXIETY

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Objectives: To model the development and generalization of anxiety-related behaviours in humans using the conditioned suppression paradigm.

Methods: A multi-stage conditioning and testing format was implemented within a first-person shooter virtual reality task. Participants first underwent operant training in which they learned to shoot at crates to find hidden gold bars worth 100 points. Next, fear conditioning occurred in which a background colour conditioned stimulus (CS+) was paired with an instructed unconditioned stimulus (US), such as the screen shaking and a loss of accumulated points. Another background colour was not paired with the US (CS-). Conditioned suppression was then tested with presentations of the CSs while participants were searching for gold. Suppression ratios were calculated for multiple topographies of response (shots, hits, breaks, and accuracy). Generalized suppression was investigated via acquired equivalence, symmetry and equivalence derived relations.

Results: Significant suppression and generalized suppression was found for all response measures and for a post-experimental measure of CS-US awareness. Suppression generalized to cues indirectly related to the trained CS via acquired equivalence, symmetry and stimulus equivalence.

Conclusions: The present findings demonstrate, for the first time, unequivocal evidence of conditioned and generalized suppression in humans using a novel virtual reality task.

Publications:

Keywords: conditioned suppression, virtual reality, generalization, acquired equivalence, symmetry, stimulus equivalence, anxiety.