



THE ROLE OF OBSESSIVE-COMPULSIVE, WORRY, AND ANXIETY SYMPTOMS IN PERFORMANCE MONITORING

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Abstract

Background

- ERN is increased among those with OCD in choice response task.
- This effect has not been observed in probabilistic learning (PL) tasks

Purpose

- To explore the extent to which anxiety or worry may underlie this pattern of error-monitoring effects, or if it is specific to OC symptoms.

Methods

- EEG data recorded while participants completed Flankers and PL task.

Results

- No clear support of specific symptoms as responsible ERN pattern
- Worry symptoms had clear effects in both tasks.
- Flankers: only Worry dERN > Control
- PL: Anxiety, OC typical, and Worry dERN > Control

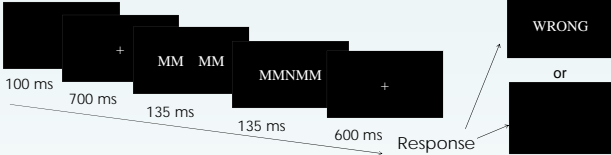
Conclusion

- The results highlight the role of worry in performance monitoring
- The findings challenge the idea that OC symptoms per se underlie enhanced ERNs in flanker tasks
- First evidence of enhanced ERN for high OC symptoms in a PL task

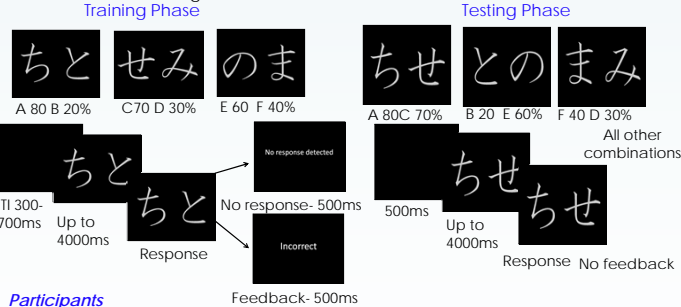
Method

Tasks

- Modified Flankers Erikson Task



- Probabilistic Learning Task



Participants

	Anxiety (23)	Worry (21)	OC Specific (17)	OC Typical (38)	Control (29)
OCI-R	Low	Low	High	High	Low
TAI	High	Low	Low	High	Low
PSWQ	Low	High	Low	High	Low

Electrophysiological Recording and Processing

- Trough-peak measure: most negative value in from 0-120 msec following the response, and preceding positive peak within 100 msec.
- Difference wave forms (dERN): Suboptimal- Optimal, Error-Correct

Results

Figure 1. Flankers task: ERP amplitudes of correct and error trials, and dERN by group at Cz, with headmaps depicting the topography at maximal negativity

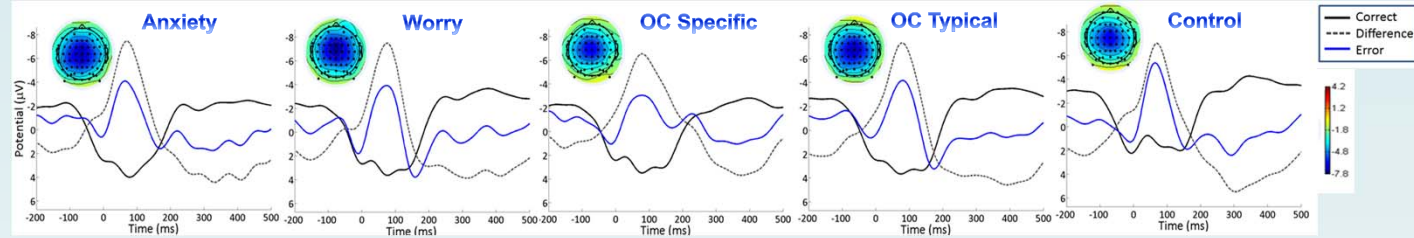


Figure 2. PL task: ERP amplitudes of optimal and suboptimal trials during testing phase, and dERN by group at Cz, with headmaps depicting the topography at max. negativity

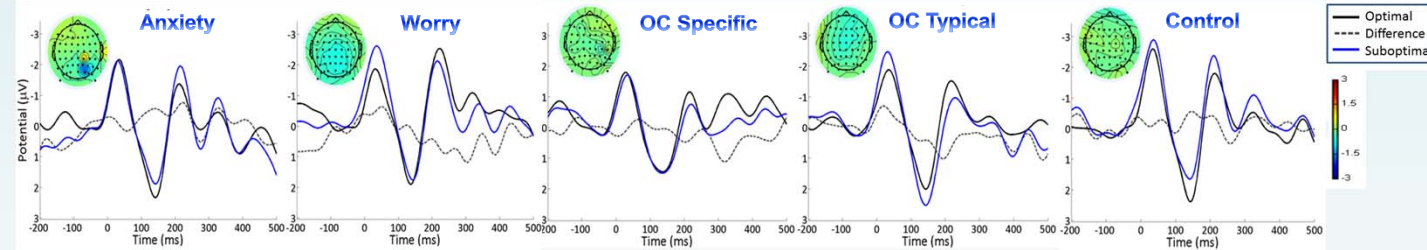


Figure 3. Flankers task: Bar graph of mean dERN by group

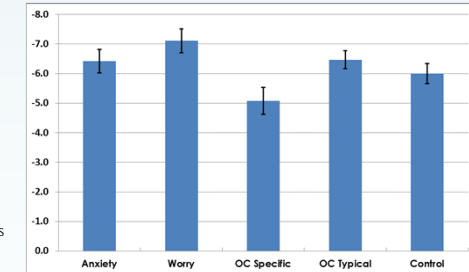
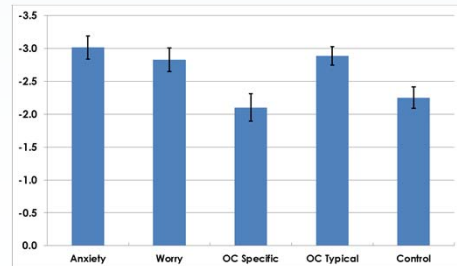


Figure 4. PL task: Bar graph of mean dERN by group



Discussion

The role of worry

- Controlling for worry and anxiety changes the ERN effect
- Recent research supports role of worry in the enhanced ERN effect

Probabilistic Learning

- However, worry has been described as probabilistic
- High worry → increased sensitivity to probabilistic errors

Group Composition

- What is the anxiety group measuring? Anxious arousal? Not likely
- OC specific: Not characteristic of OC groups in literature
- OC typical: More representative of typical OC groups used in literature
- Control: Below median scores and not extremely low scores like some control groups in literature

Conclusion

- Anxiety, worry, and OC symptoms are related to error-monitoring processes differently as a function of task
- The results underscore importance of worry in both flankers and PL tasks
- These findings challenge the idea that OC symptoms per se underlie enhanced ERNs in flanker tasks

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Acknowledgments: This work was supported in part by a National Science Foundation Graduate Research Fellowship (2011097808) and by generous support from Worth Publishing.
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