

# Author's Accepted Manuscript

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PII: S0028-3932(16)30073-2  
DOI: <http://dx.doi.org/10.1016/j.neuropsychologia.2016.03.010>  
Reference: NSY5920

To appear in: *Neuropsychologia*

Received date: 2 November 2015  
Revised date: 23 February 2016  
Accepted date: 9 March 2016

Cite this article as: Ezra E Smith, Laura Zambrano-Vazquez and John JB Allen  
Patterns of alpha asymmetry in those with elevated worry, trait anxiety, and  
obsessive-compulsive symptoms: A test of the worry and avoidance models of  
alpha asymmetry, *Neuropsychologia*  
<http://dx.doi.org/10.1016/j.neuropsychologia.2016.03.010>

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Patterns of alpha asymmetry in those with elevated worry, trait anxiety, and obsessive-compulsive symptoms: A test of the worry and avoidance models.

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### Abstract

Some authors have argued that worry cues lateralization of frontal brain activity leftward, whereas other varieties of avoidance motivation cue lateralization of frontal brain activity rightward. By comparison, more right-than-left parietal activity correlates with anxious arousal. The purpose of the present report was to test two models of brain lateralization and anxiety: one model that proposed that worry correlates with more left-frontal activity and another model that proposed that avoidance motivation (including worry) correlates with more right-frontal activity. Undergraduate students were selected for worry, obsessive-compulsive symptoms, and trait anxiety using self-report questionnaires. A subset of participants also met DSM-IV criteria for Generalized Anxiety Disorder (GAD) or Obsessive-Compulsive Disorder (OCD). Alpha asymmetry and also a global-power-adjusted metric of alpha power were calculated from each participant's resting-state EEG. It was expected that participants with elevated worry and participants meeting criteria for GAD would show more left-than-right frontal activity. In contrast, participants with elevated trait anxiety, obsessive-compulsive symptoms, and those with an OCD diagnosis were expected to exhibit more right-than-left frontal activity. Participants with elevated worry, participants with a GAD diagnosis, and participants with elevated obsessive-compulsive symptoms, had more left frontal activity than low symptom individuals. Those with high scores on trait anxiety, but low

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