



The Relationship between Anxiety and Risk-Taking is Moderated by Ambiguity

Eva E. Ebert, Andrew R. Smith & Joshua J. Broman-Fulks

Appalachian State University



Overview

The current study tested whether the amount of ambiguity in risky decisions would moderate the relationship between risk-taking and anxiety. Participants completed individual difference measures and a version of the Balloon Analogue Risk Task (BART) with either high or low ambiguity about the likelihood of a negative outcome. Higher levels of anxiety predicted less risk-taking in the high ambiguity version, but anxiety and risk-taking were unrelated in the low ambiguity version. This study demonstrates that to understand the relationship between anxiety and risk-taking, the ambiguity level must be considered.

Background

Individuals with higher levels of anxiety tend to be risk-averse (e.g., Giorgetta et al., 2012; Maner et al., 2007).

Anxious individuals tend to interpret ambiguous stimuli as more threatening and negative outcomes as more likely (Butler & Matthews, 1987; Clark & Wells, 1995).

Preliminary research suggests that anxious individuals may exhibit impaired decision-making on tasks that involve risk with high levels of ambiguity but not low levels of ambiguity (e.g., Kim et al., 2015; Zhang et al., 2015).

Unlike previous research, the current study used tasks that differed only in the ambiguity about the likelihood of the outcomes and assessed the full spectrum of anxiety symptoms.

Procedure

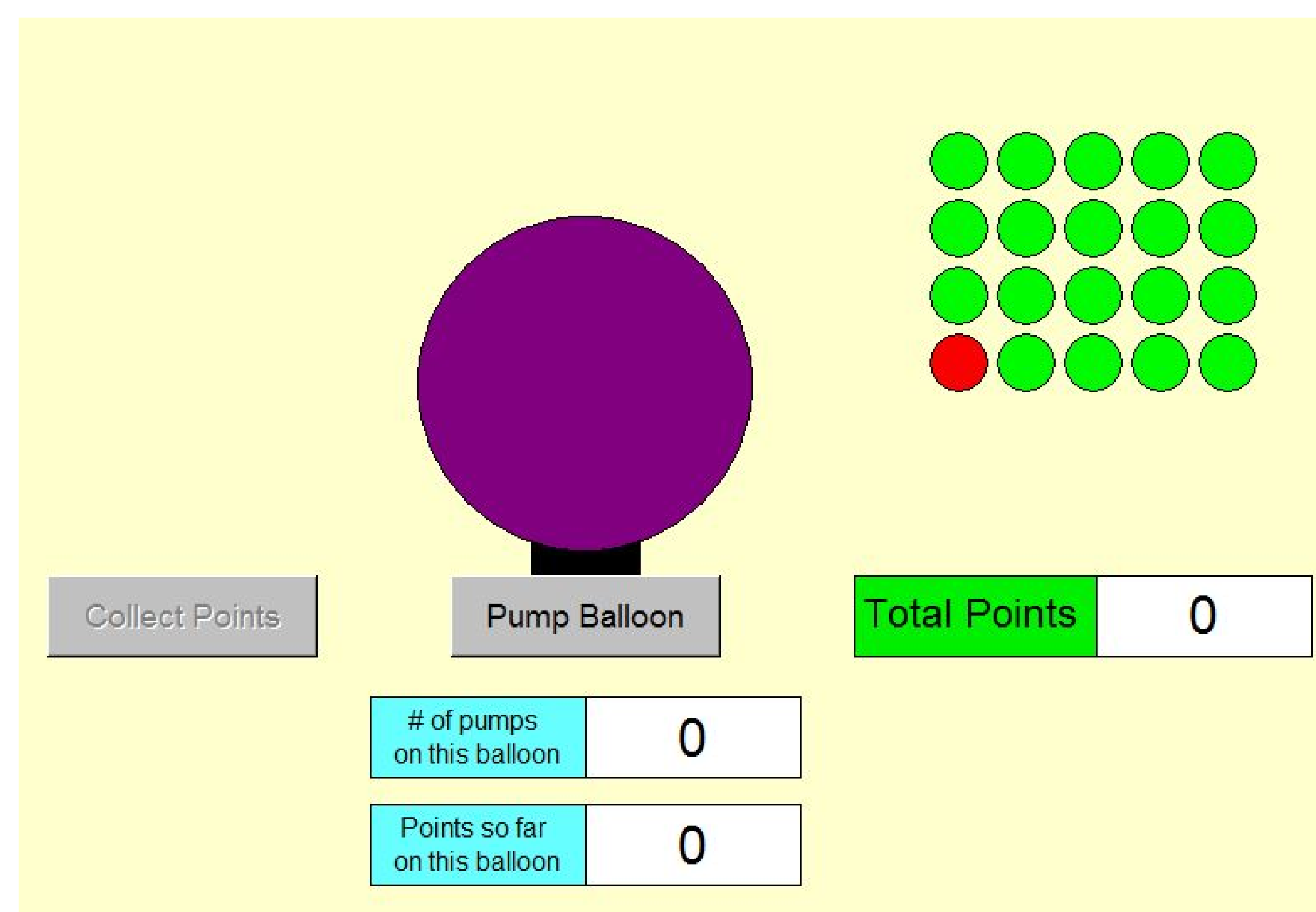
Participants (N = 124) completed the Depression Anxiety Stress Scale (DASS). Participants were then randomly assigned to complete either a high or low ambiguity version of the BART. They completed 60 rounds—20 per balloon color. Balloon colors corresponded to different explosion likelihoods.

Versions of the BART

The BART is a computerized risk-taking task in which participants pump up balloons (Lejuez et al., 2002).

The high ambiguity version closely replicated the classic version of the BART.

The low ambiguity version included a visual indicator of each balloon's explosion likelihood. The visual indicator consisted of an array of balls. The computer picked a ball at random each time the balloon was pumped.



Results

- Participants who completed the low ambiguity version of the BART exhibited higher levels of risk taking than participants who went through the high ambiguity version.
- The pump scores for the participants who went through the low-ambiguity version varied across the three balloon colors to a greater extent than participants who went through the high-ambiguity version (see Figure 1).
- For the participants who went through the high ambiguity version of the BART, higher anxiety was associated with less risk taking. However, in the low ambiguity version, anxiety and risk taking were unrelated to one another (see Figure 2).

Figures

Figure 1. Pump Variation

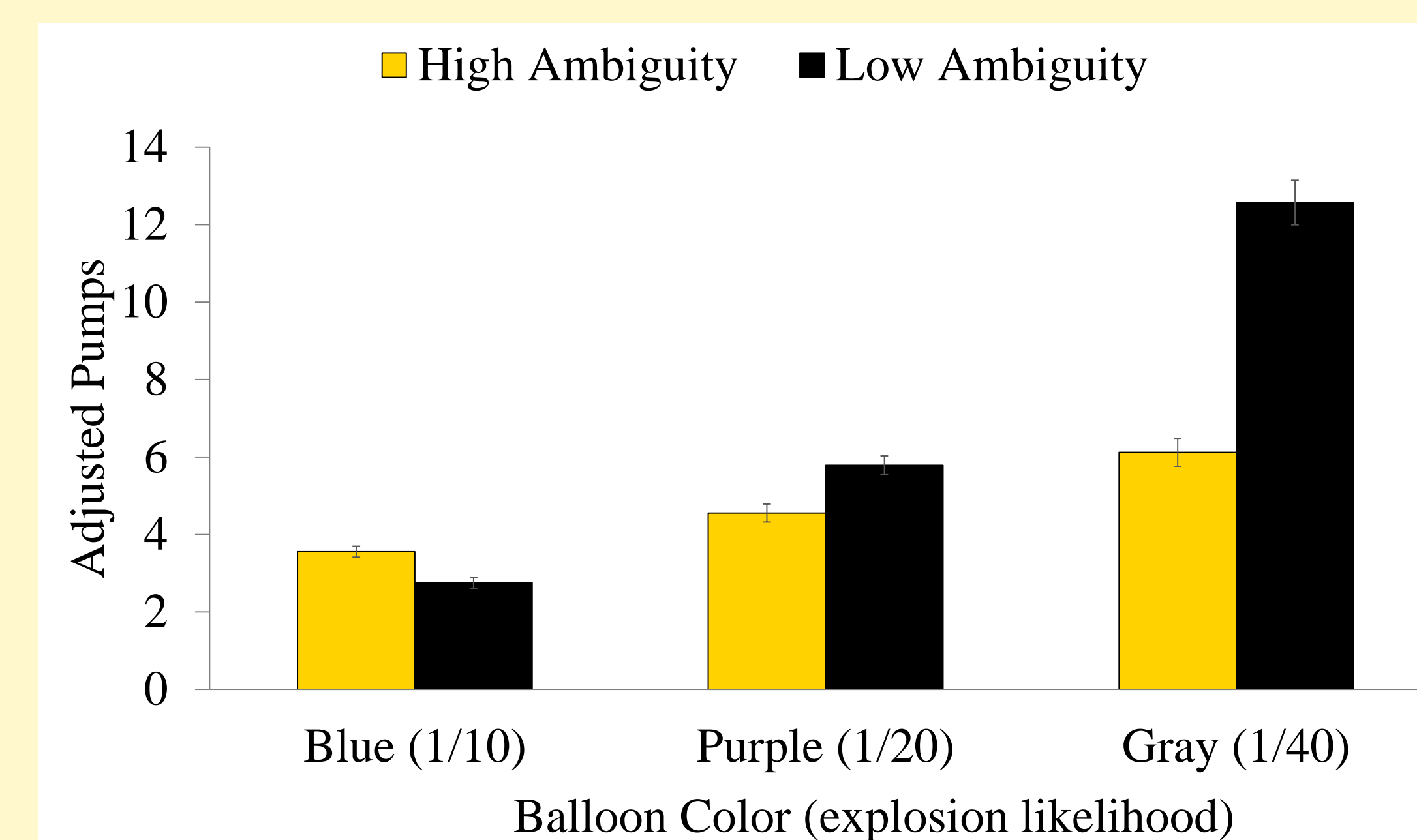
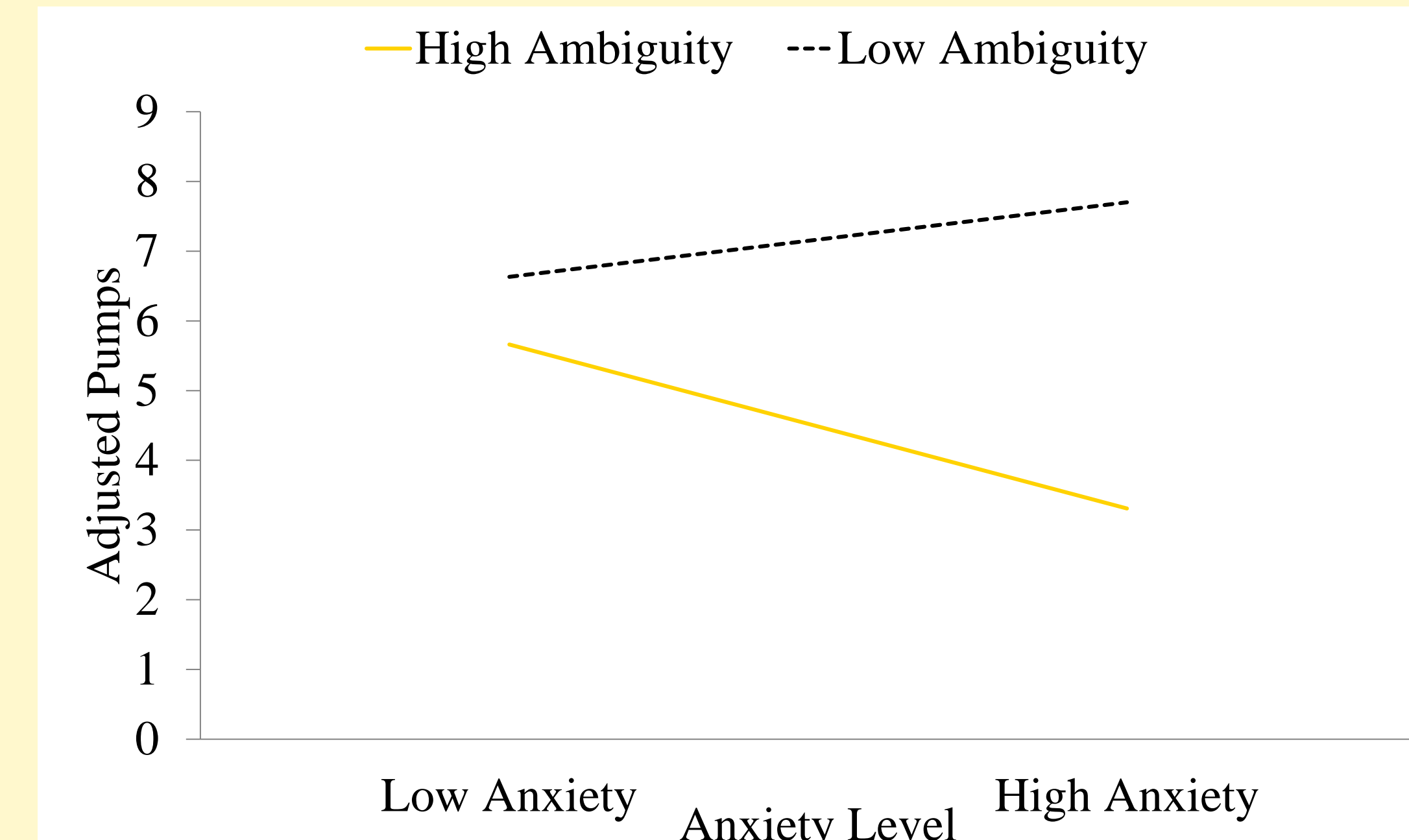


Figure 2. Anxiety and RT



Conclusions

When the likelihood of the negative outcome was ambiguous, participants with higher anxiety exhibited less risk taking. When the likelihood was relatively unambiguous, there was not a significant relationship between anxiety and risk taking. This finding suggests that, in the absence of information regarding the probability of positive and negative outcomes, the tendency of anxious persons to perceive increased threat and higher probability of negative outcomes may lead them to be more risk averse. Thus, the relationship between anxiety and risk taking may not be driven solely by the uncertainty involved in risky-decisions; ambiguity should be considered with regard to the decision-making strategies of anxious individuals.

Eva Ebert
ebertee@appstate.edu