Reactive Gambling: Approach Motivation Regulates Anxiety via Decreased Sensitivity to Negative Outcomes.

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INTRODUCTION

Background

❖ A number of real-world events demonstrate a puzzling phenomenon—anxiety, which primarily inspires caution, often increases risk-taking.

  ❖ e.g., dangerous driving, drug use, drinking, crime, and gambling.

❖ The Reactive Approach Motivation (RAM) model proposes that anxiety causes people to become approach motivated in an effort to alleviate the aversive state.

❖ While approach motivation may regulate the tension caused by anxiety, it may also make people less sensitive to negative outcomes and, counter-intuitively, more open to taking risks.

Trait Approach (BAS)

❖ The behavioral approach system (BAS) regulates goal-directed motivation.

❖ Those with high BAS sensitivity (i.e., trait approach) are expected to be the most reactive in the face of anxiety, thus the most prone to risk.

❖ Therefore, the current studies expected trait approach (BAS) to moderate the relationship between anxiety and risk-taking.

Frontal Theta Power (EEG)

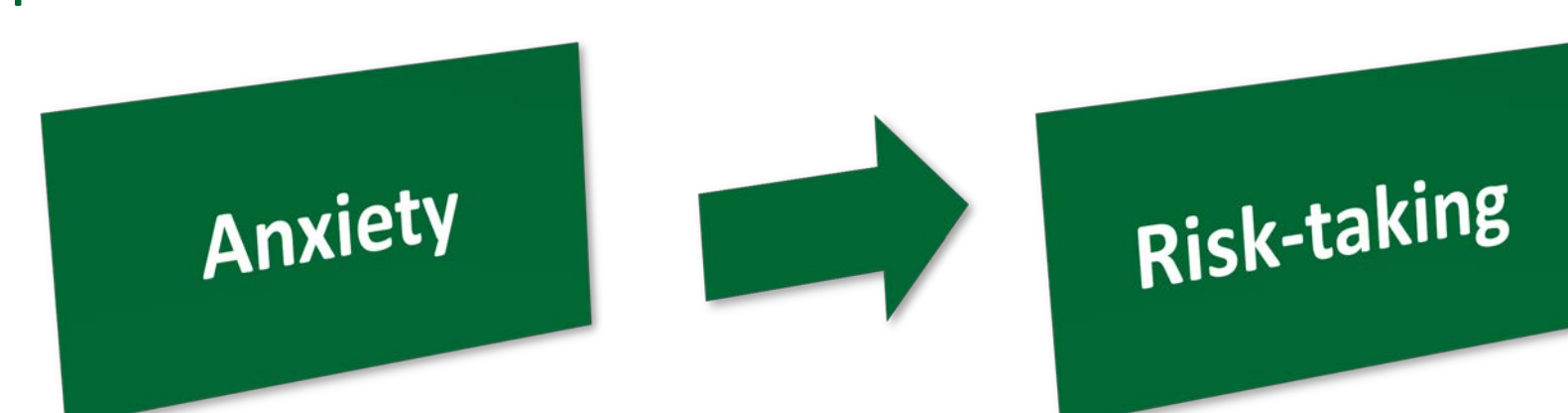❖ Frontal theta power reflects anxiety and the demand for cognitive control.

Overview of Studies

❖ In three studies, we examined whether anxiety leads to reactive risk-taking among those high in trait approach (BAS).
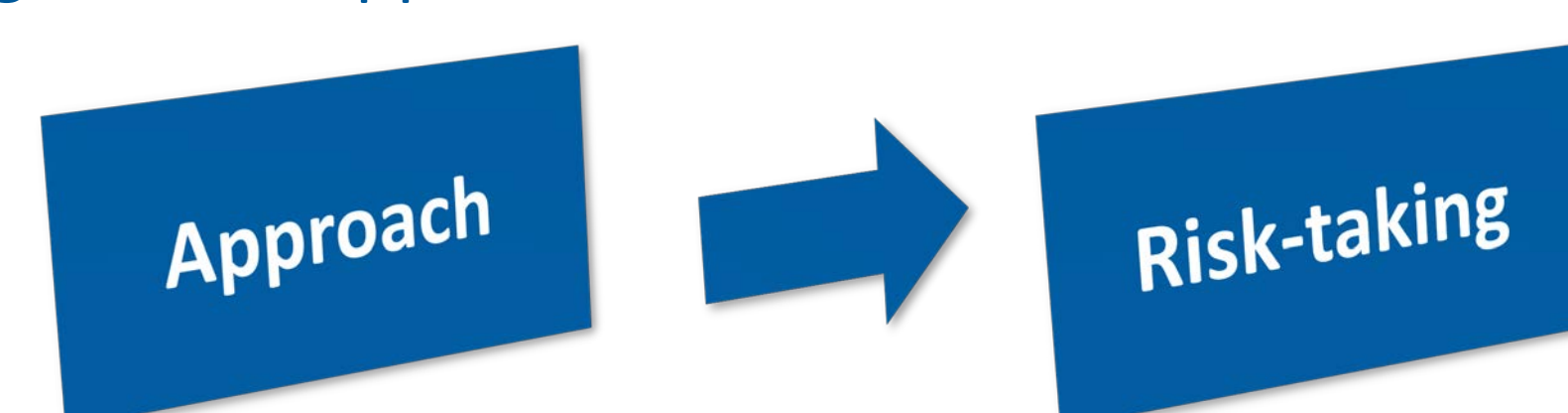
HYPOTHESES

Study 1

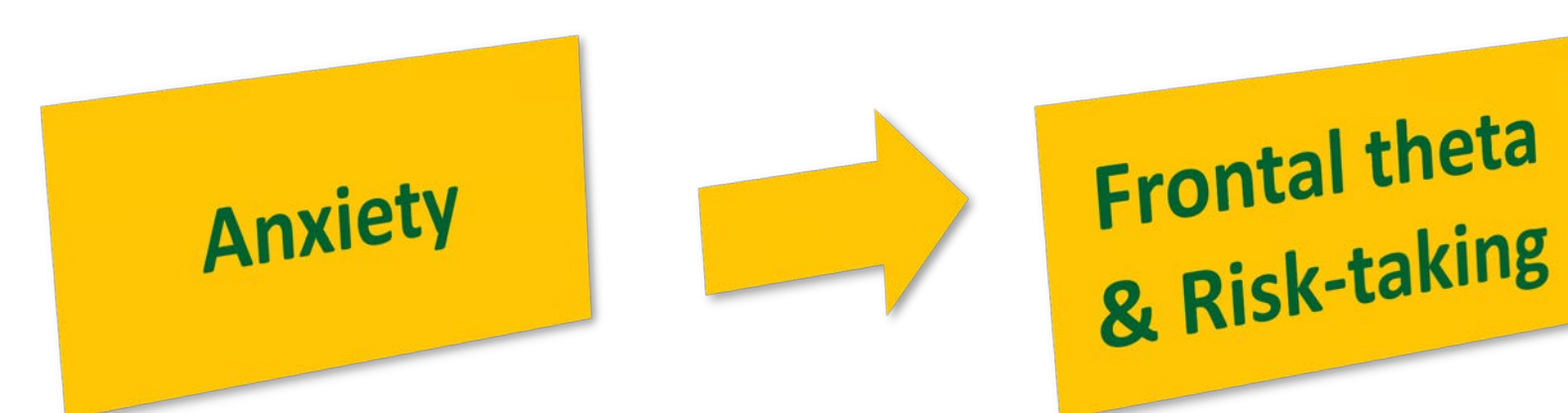Anxiety will increase risk-taking for those high in trait approach.

Anxiety → Risk-taking

Study 2

Approach motivation will increase risk-taking for those high in trait approach.

Approach → Risk-taking

Study 3 (Using EEG)

Anxiety will increase frontal theta and risk-taking for those high in trait approach.

Anxiety → Frontal theta & Risk-taking

METHOD

Independent variable:

❖ Achievement anxiety vs. control.

Dependent variable:

❖ Balloon Analogue Risk Task (BART).

Moderator: Trait approach (BAS).

Study 1 (*N* = 235)

"How well do you understand: In LISREL…The structural equation model is: Bn = r ξ + ζ Where n (eta) … of latent endogenous variables; ξ (xi)."

BART

Independent variable:

❖ Approach motivation vs. control.

Dependent variable:

❖ Balloon Analogue Risk Task (BART).

Moderator: Trait approach (BAS).

Study 2 (*N* = 225)

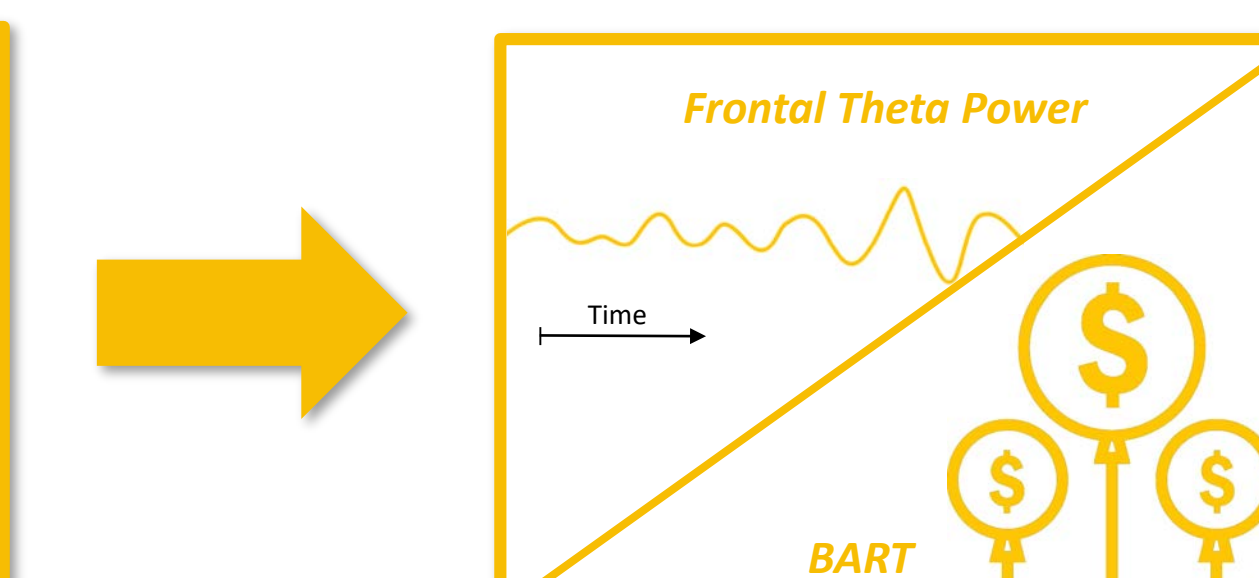*Approach:* Participants wrote about positive outcomes they would ideally like to accomplish.

BART

Independent variable:

❖ Economic anxiety vs. control.

Dependent variables:

❖ Frontal Theta (Mediator) & BART.

Moderator: Trait approach (BAS).

Study 3 (*N* = 97)

Economic Anxiety: participants read an ostensibly real CBC News article about an unsettling economic forecast in Canada that would specifically impact students.
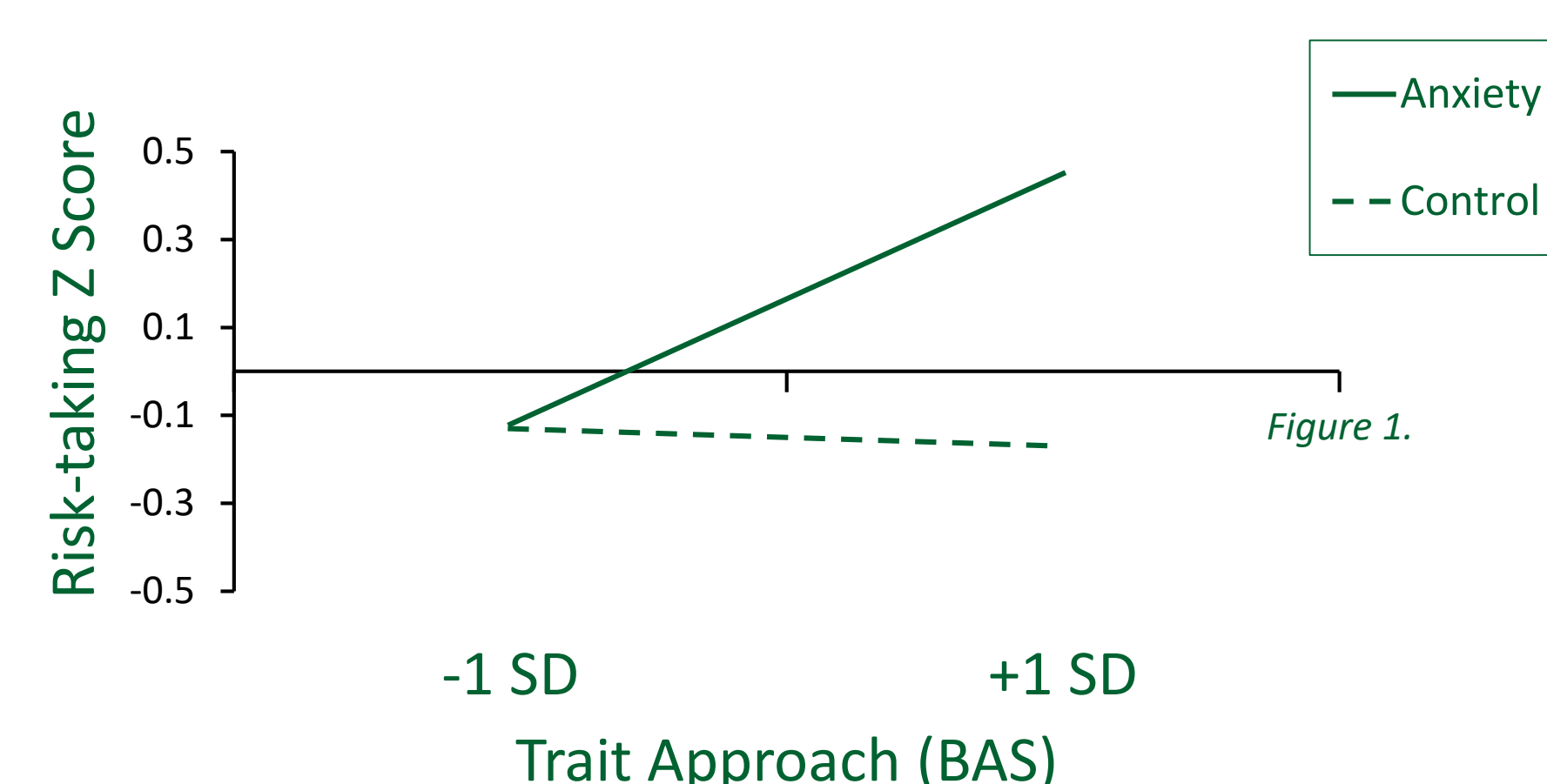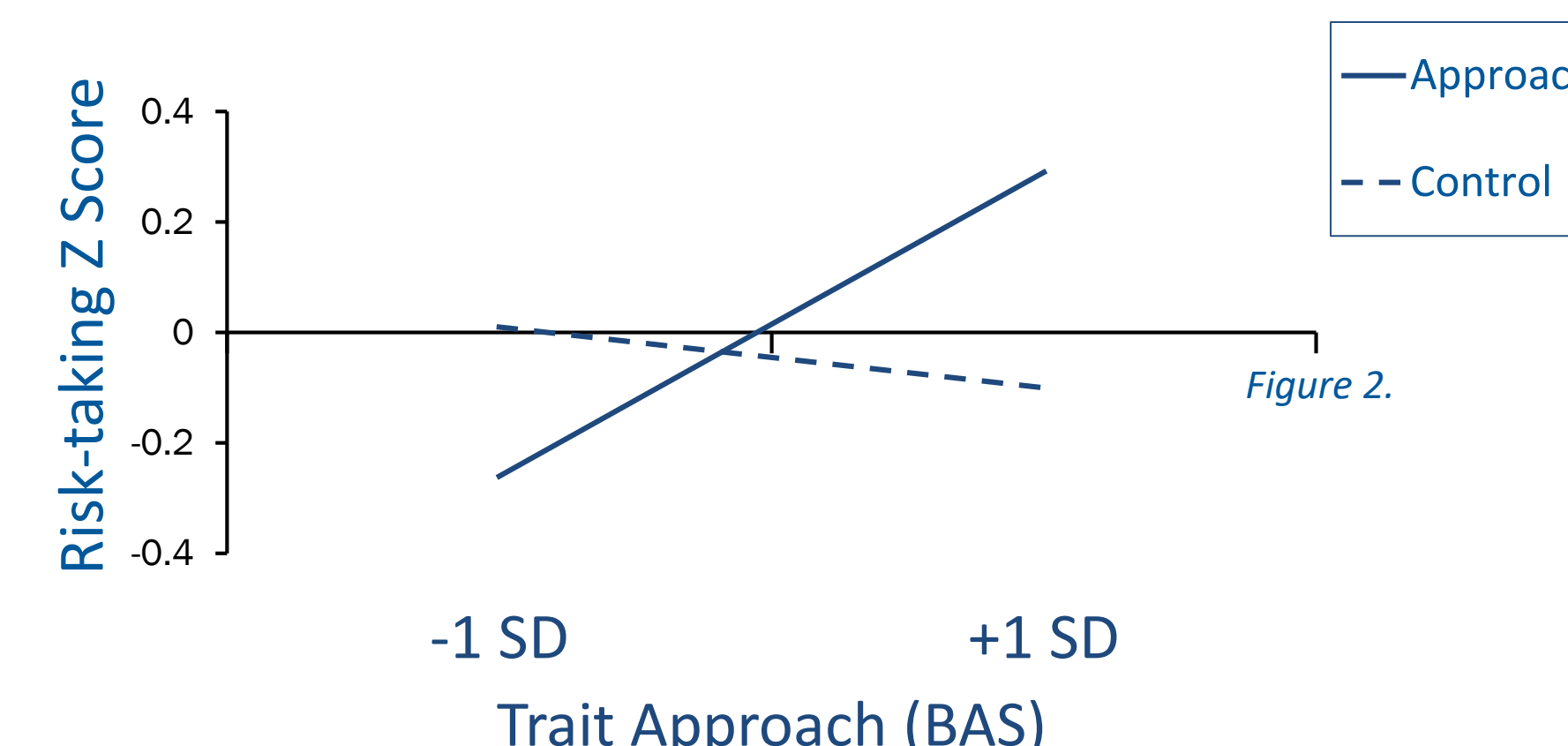
Frontal Theta Power / Time / BART

RESULTS

Study 1

Among participants high in trait approach, achievement anxiety increased risk-taking on the BART (*M* = 0.45) vs. a control condition (*M* = -0.17), *t* (234) = 3.434, *p* < .001 (Figure 1).
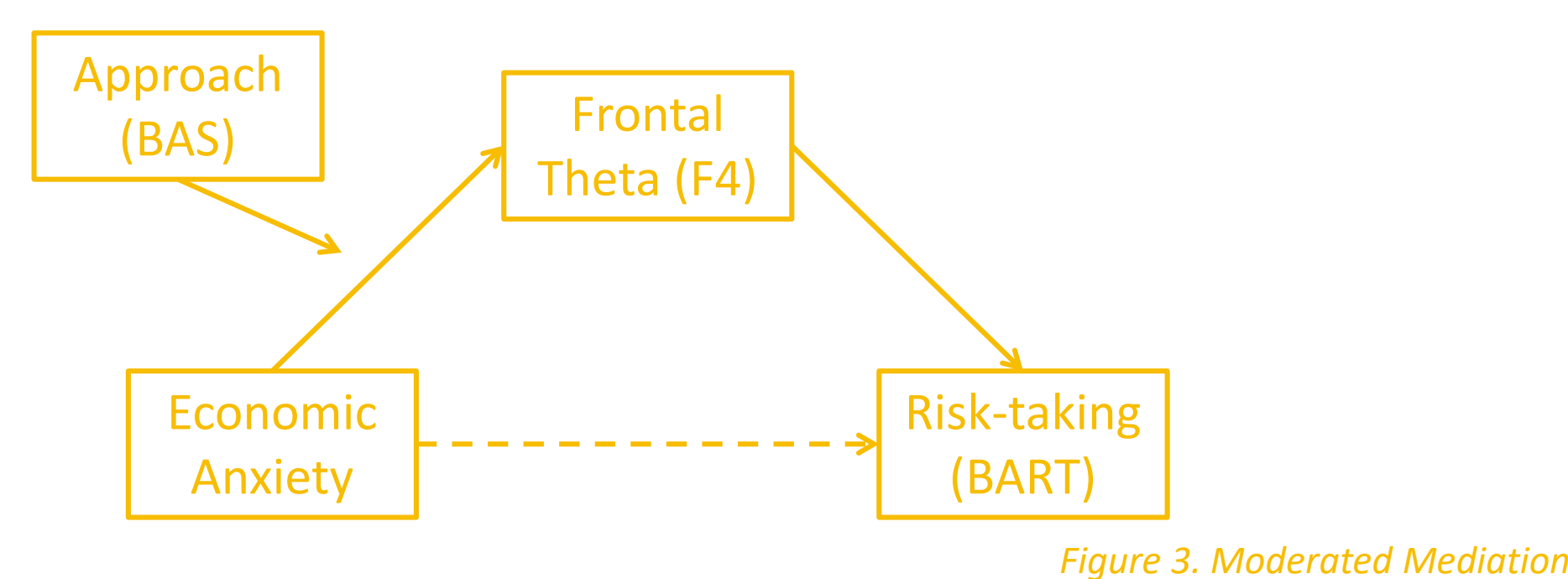

Figure 1.

Study 2

Among participants high in trait approach, approach motivation increased risk-taking on the BART (*M* = 0.29) vs. a control condition (*M* = -0.10), *t* (224) = 2.09, *p* < .05 (Figure 2).

Figure 2.

Study 3

Among participants high in trait approach, economic anxiety increased frontal theta power which was associated with increased risk-taking on the BART, compared to a control condition (Figure 3). Indirect effect: Index: 0.51, *95% CI [.01, 1.2].*

Figure 3. Moderated Mediation.

DISCUSSION

❖ The current studies provide support for the Reactive Risk-taking Hypothesis (Figure 4).

❖ Our main conclusion is that risk-taking offers a palliative, approach-oriented response to anxiety.

❖ Approach motivation is thought to mute sensitivity to negative outcomes and promote the pursuit of rewards. By doing so, anxious individuals can reorient themselves towards less conflicted goals, relieving the aversive feeling caused by anxiety.

❖ Risk-taking is characterized by insensitivity to negative outcomes and the pursuit of rewards, thus making it an ideal antidote to anxiety.

❖ The Reactive Risk-taking Hypothesis focuses on participants high in trait approach. Future research could address how individuals low in trait approach react following anxious experiences, as they did not display the same proneness for risk-taking in the current studies.
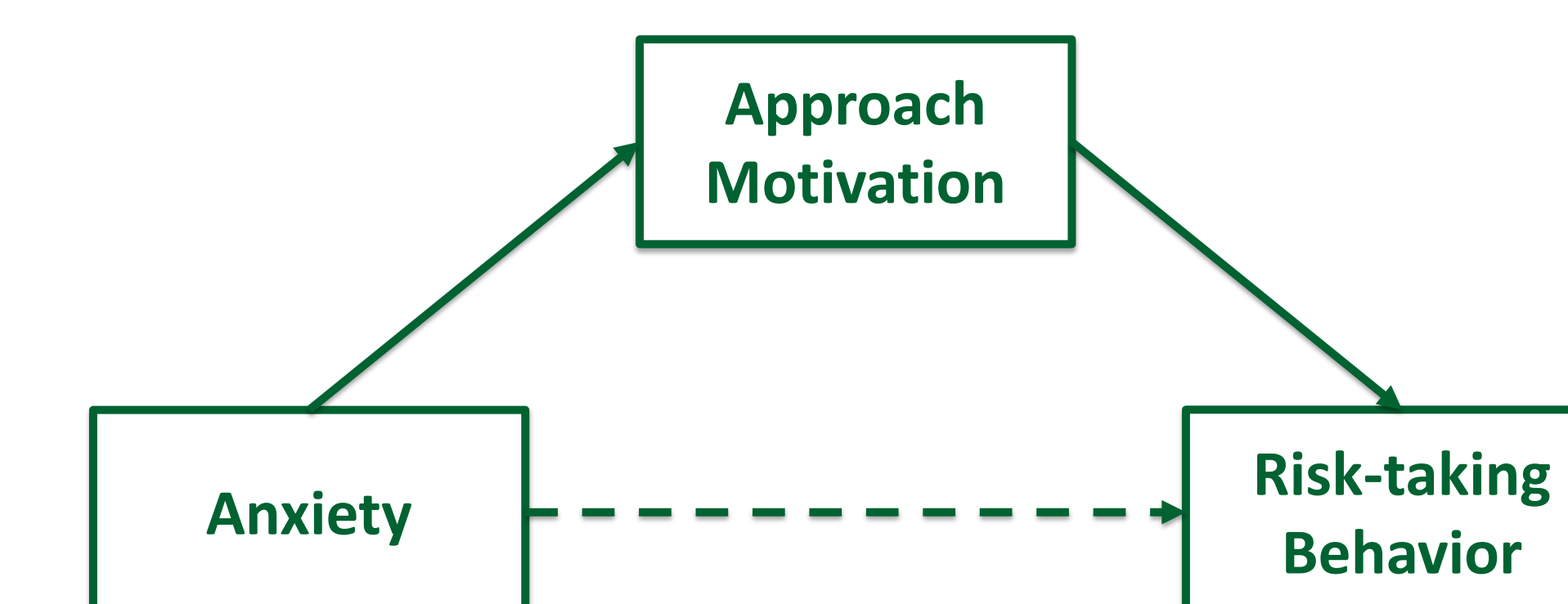

Figure 4. Reactive Risk-taking Hypothesis.

Key references

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Lejuez, C. W., Read, J. P., Kahler, C. W., Richards, J. B., Ramsey, S. E., Stuart, G. L., ... & Brown, R. A. (2002). Evaluation of a behavioral measure of risk taking: the Balloon Analogue Risk Task (BART). Journal of Experimental Psychology: Applied, 8(2), 75.

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