Physiological Arousal Predicts Subjective Time Distortion in Novice Skydivers

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INTRODUCTION

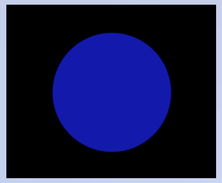
Under threatening or arousing circumstances, prior research indicates that participants evince *subjective time dilation*, the perception of time as moving at a relatively slow rate[1,2]. Functionally, subjective time dilation may reflect up-regulated information-gathering, facilitating i) improved threat-response, and/or ii) richer memory consolidation and/or iii) improved subsequent long-term recall.

OBJECTIVE

Replicate subjective time dilation in an ecologically valid context of physical risk-taking: skydiving.

METHODS

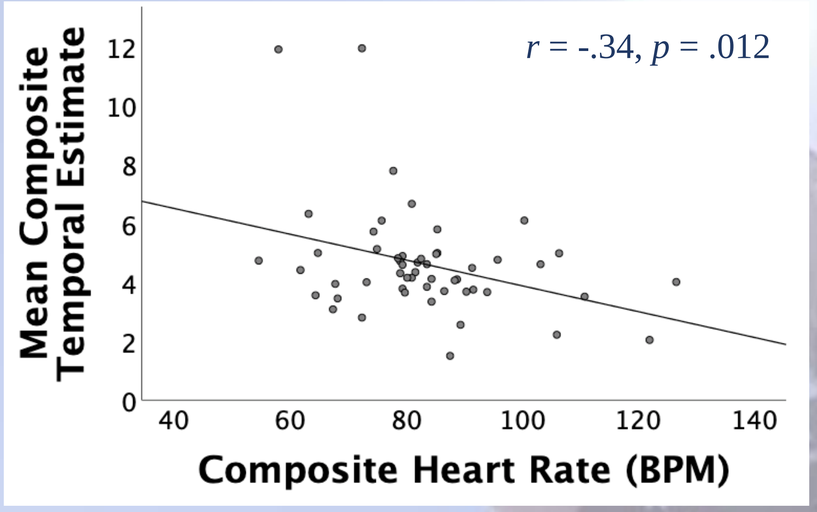
- N = 80 novice skydivers
- EKG taken at 5 time points (3 pre-jump / 2 post-jump; α = .83)
- Participants view video stimuli (blue circle) appearing 2s, 5s, and 6s before / after jump (6 trials; α = .75)
- Participants then press simulated button in attempt to duplicate video length.



Stimulus

Estimate Button

RESULTS



- Significant negative correlation between time estimate and heart rate.
- No effects of self-reported fear or arousal.
- Difficult to interpret:
  - Subjective time *constriction* (i.e., the stimulus was encoded as shorter)?
  - Subjective time *dilation* (i.e., the time spent holding down the estimate button was perceived as longer)?

FUTURE DIRECTIONS

- Manipulate threat-arousal, replicate with more complex stimuli, to:
  - Correlate memory of details with time distortion
  - Retest to assess correlation with long-term memory enhancement
- Replicate and compare estimate button measure with alternate measures of subjective time dilation [1].

REFERENCES

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