Effects of feedback framing and regulatory focus are task-dependent

GIFT Symposium 6

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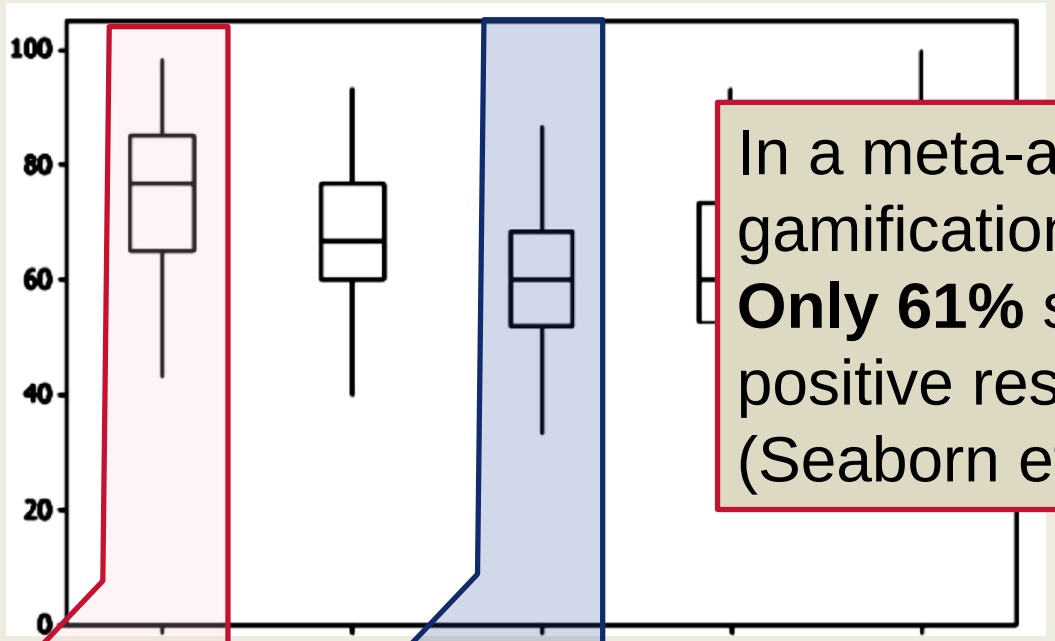
Imagine you are designing a training program.

Gamification does not reliably work

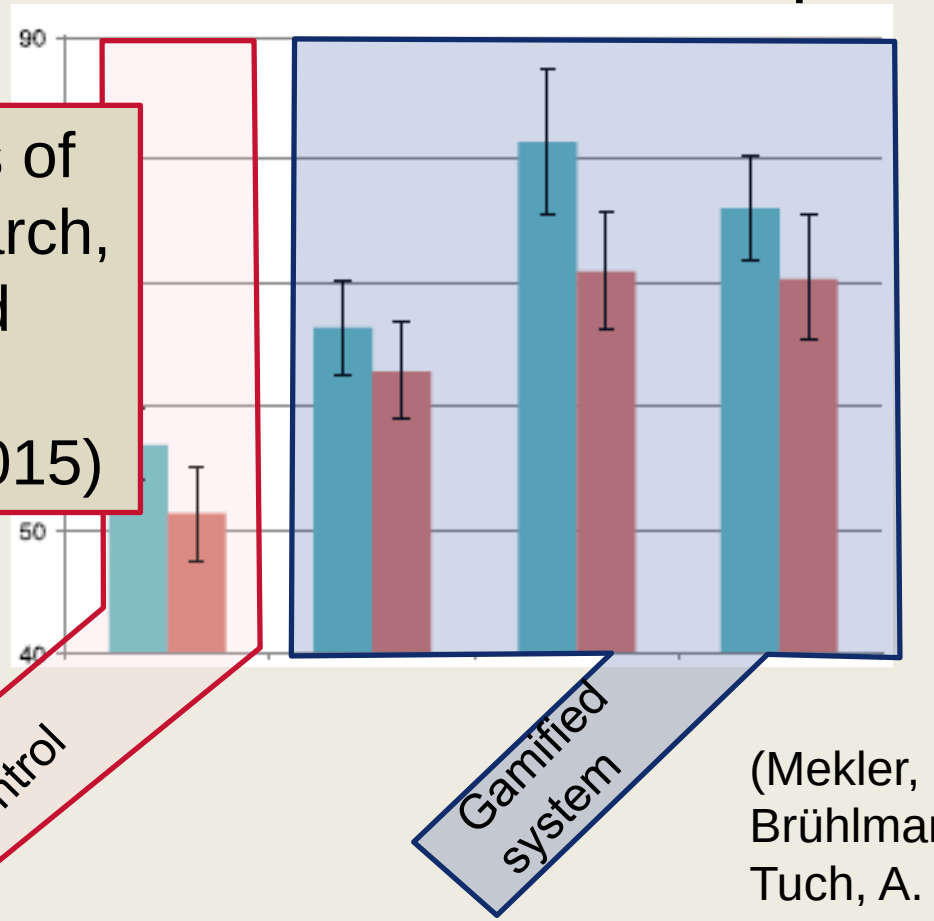
Gamification can hurt



(de-Marcos, L., Garcia-Lopez, E., & Garcia-Cabot, A., 2016).

In a meta-analysis of gamification research, **Only 61%** showed positive results. (Seaborn et al., 2015)

Gamification can help



(Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, K., 2015).

Task and traits may help predict feedback effectiveness

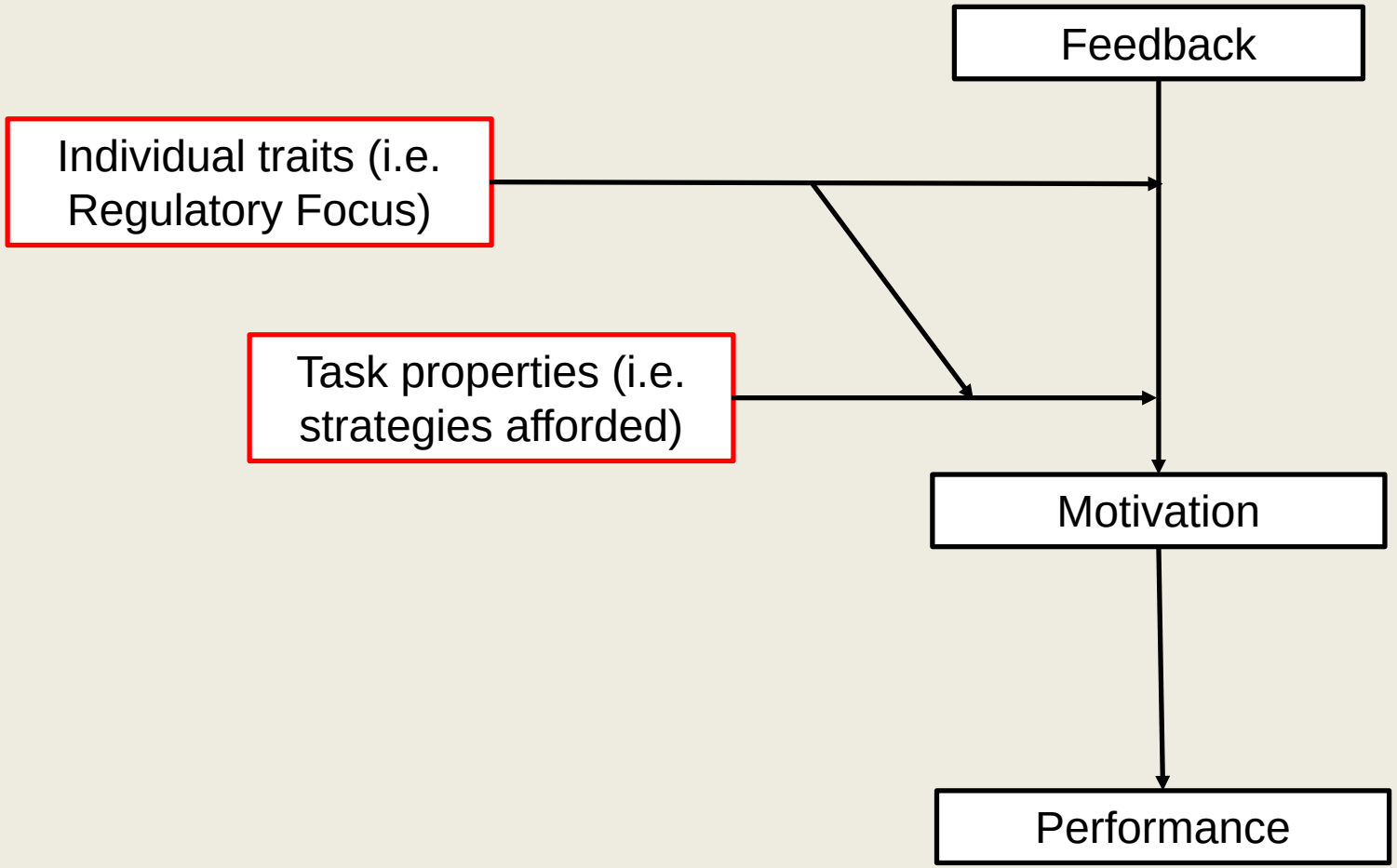
Overview

Regulatory Focus & Fit

Hypothesis: Match
Training: Go/No-go
Training: Stimuli
Procedure
Conditions: Framing
Transfer: Patrol Task

Results
Correct Rejection
Transfer Accuracy

Why?
Implications for GIFT



Regulatory focus & Fit theory

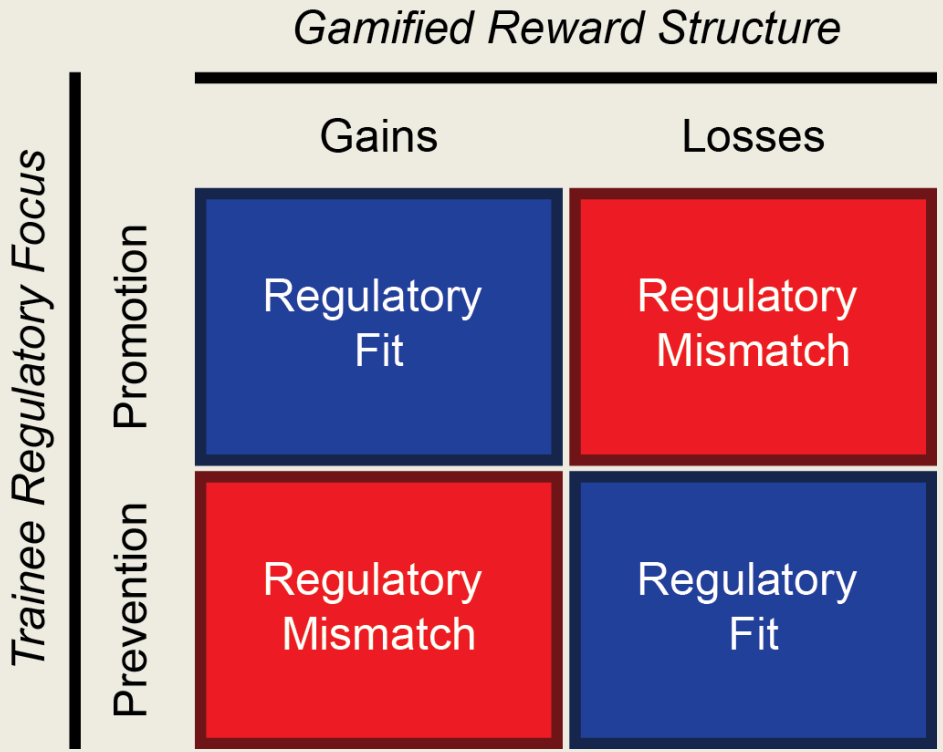
Regulatory Fit Theory: A match between feedback framing and learner's regulatory focus should increase motivation as compared to mismatch.

Promotion Focus

- approach gains
- intrinsic ideals

Prevention Focus

- avoid loss
- extrinsic obligations



Otto et al., 2010

Hypothesis

Feedback framing that matches the learner's regulatory focus should make training more effective.

Regulatory Focus: a propensity to either approach gains or avoid loss

Regulatory Fit: a 'fit' between the learner and the nature or framing of a goal yields higher engagement

Inhibitory Control

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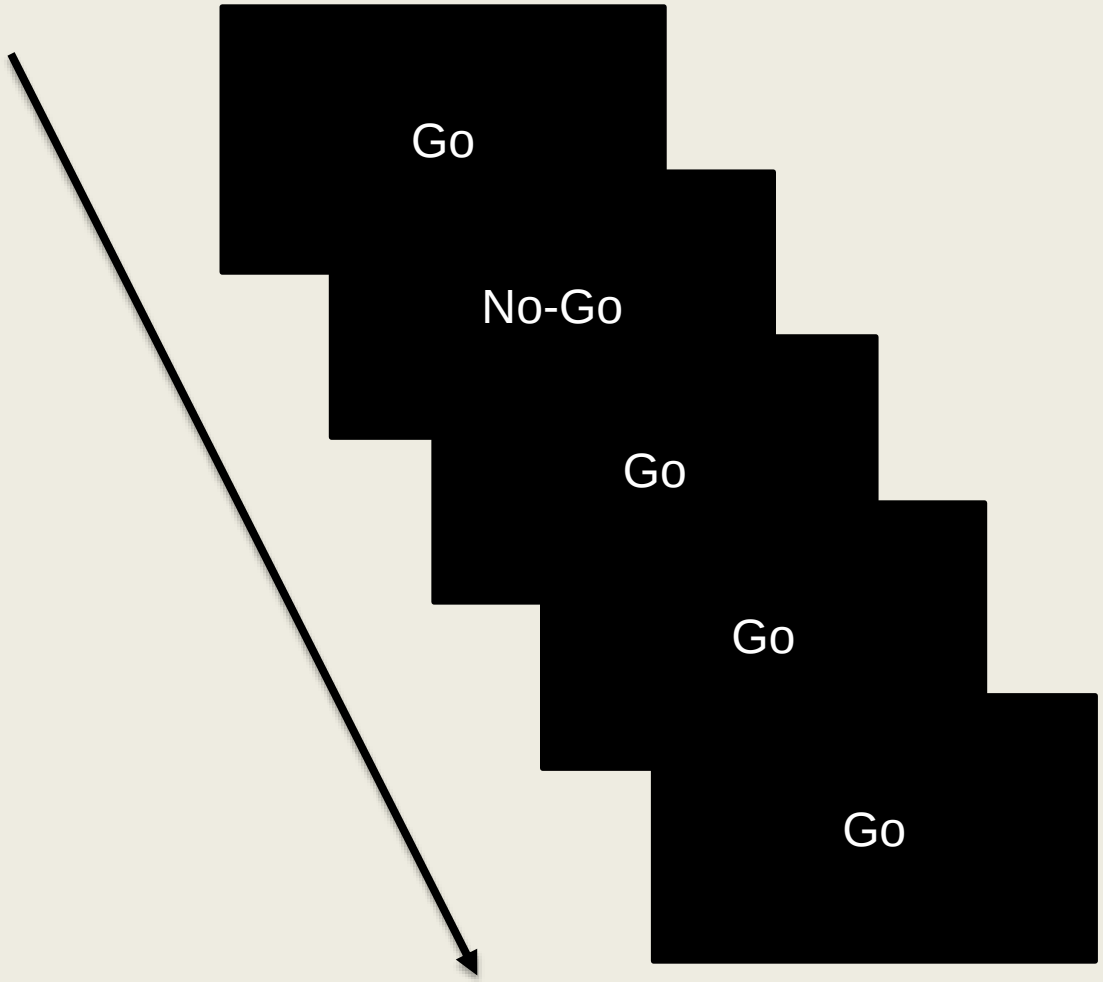

Go/No-go training task

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Training: Go/No-Go Threat/non-threat classification

Stimulus  ...

Button press Y Y Y N Y Y

THREAT

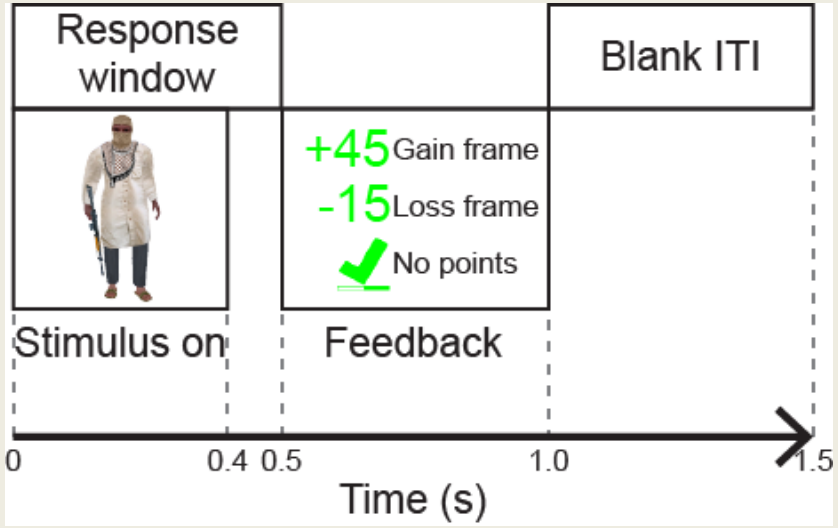
NON-THREAT

Instructions emphasized accuracy and that speed was secondary.

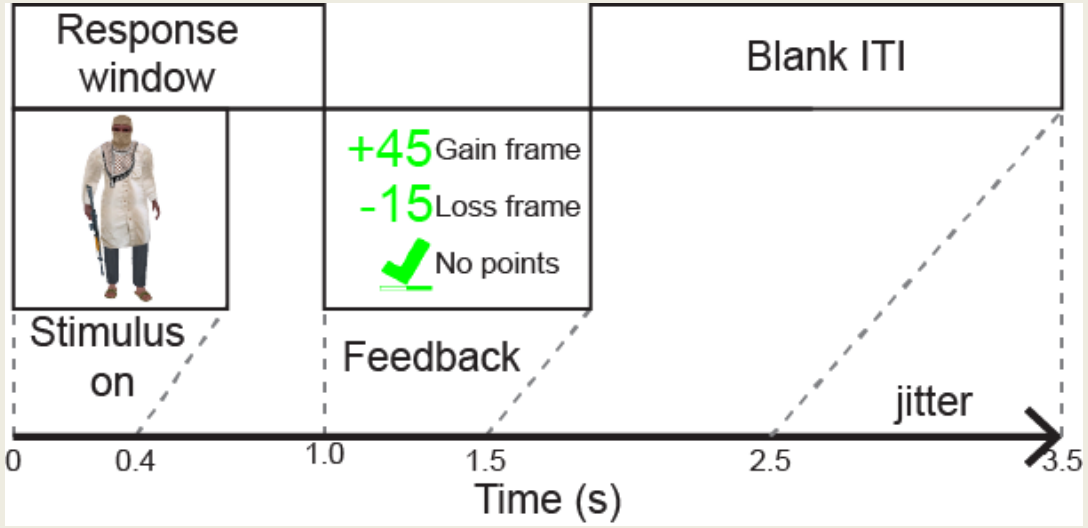
Procedure

RFQ→ Training (Go/No-go) → Questions → Transfer (Patrol task) → Exit

Experiment 1 Trial Timeline **N=93**



Experiment 2 Trial Timeline **N=30**



Independent variable: framing of feedback

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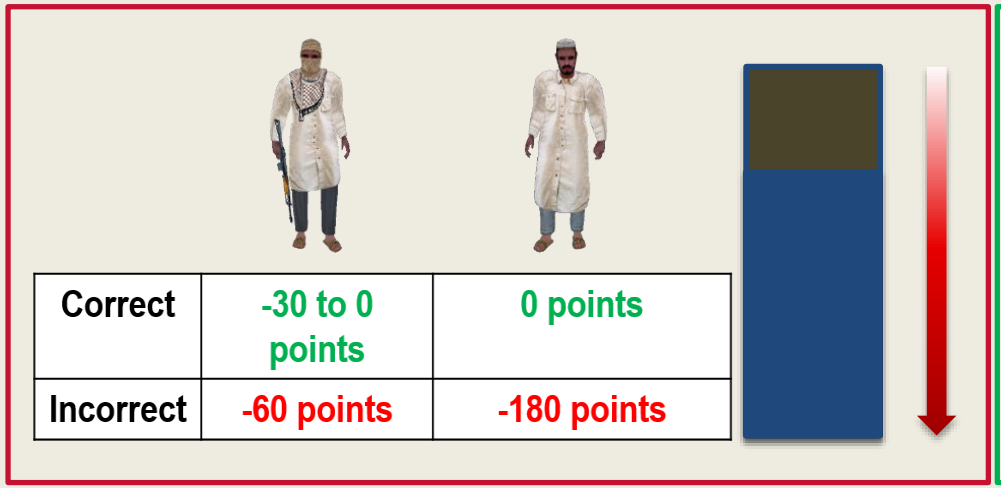
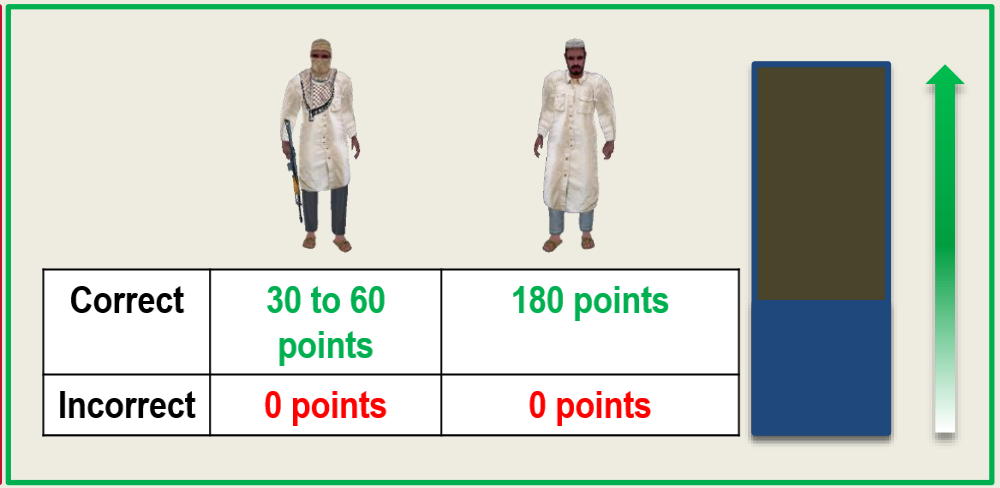
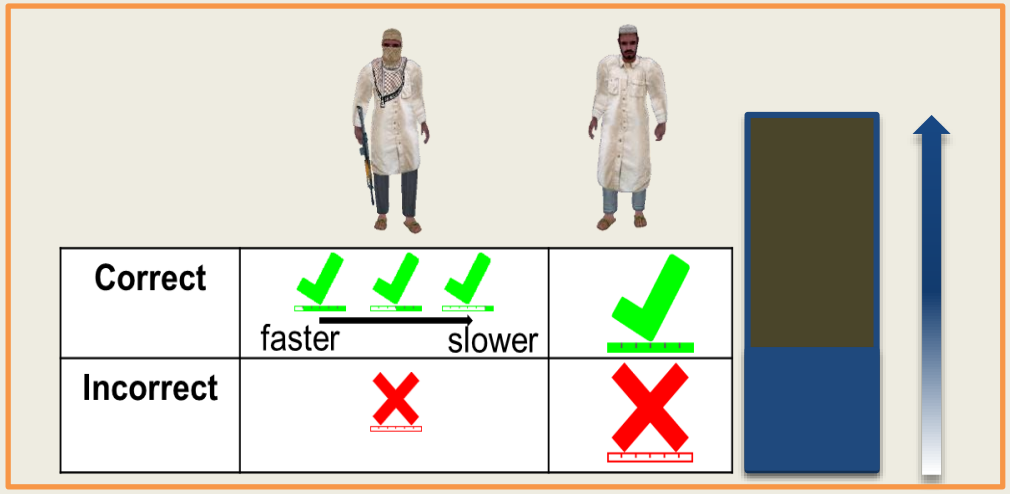


Loss



Gain



Control

Transfer task

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Results
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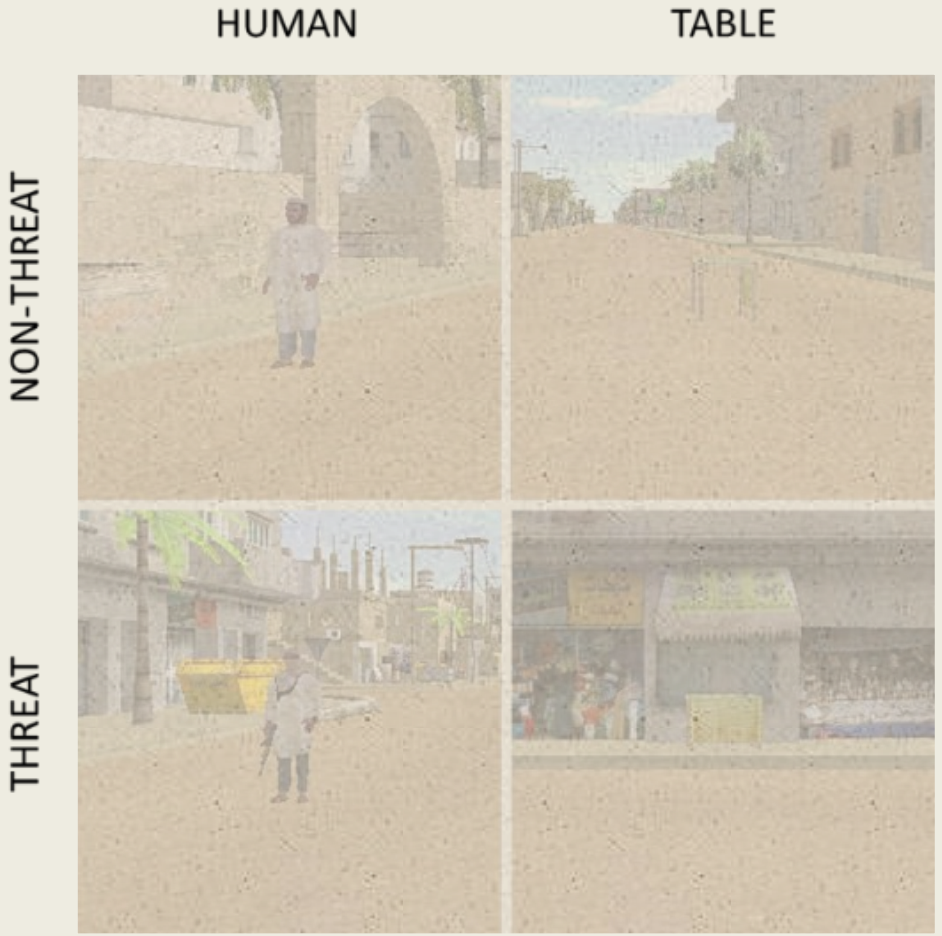
Transfer Accuracy

Why?
Implications for GIFT

Transfer: Simulated patrol



Dependent variables of interest

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Why?
Implications for GIFT

Training: Change in correct rejection rate

Transfer: Response accuracy

Change in Correct Rejection

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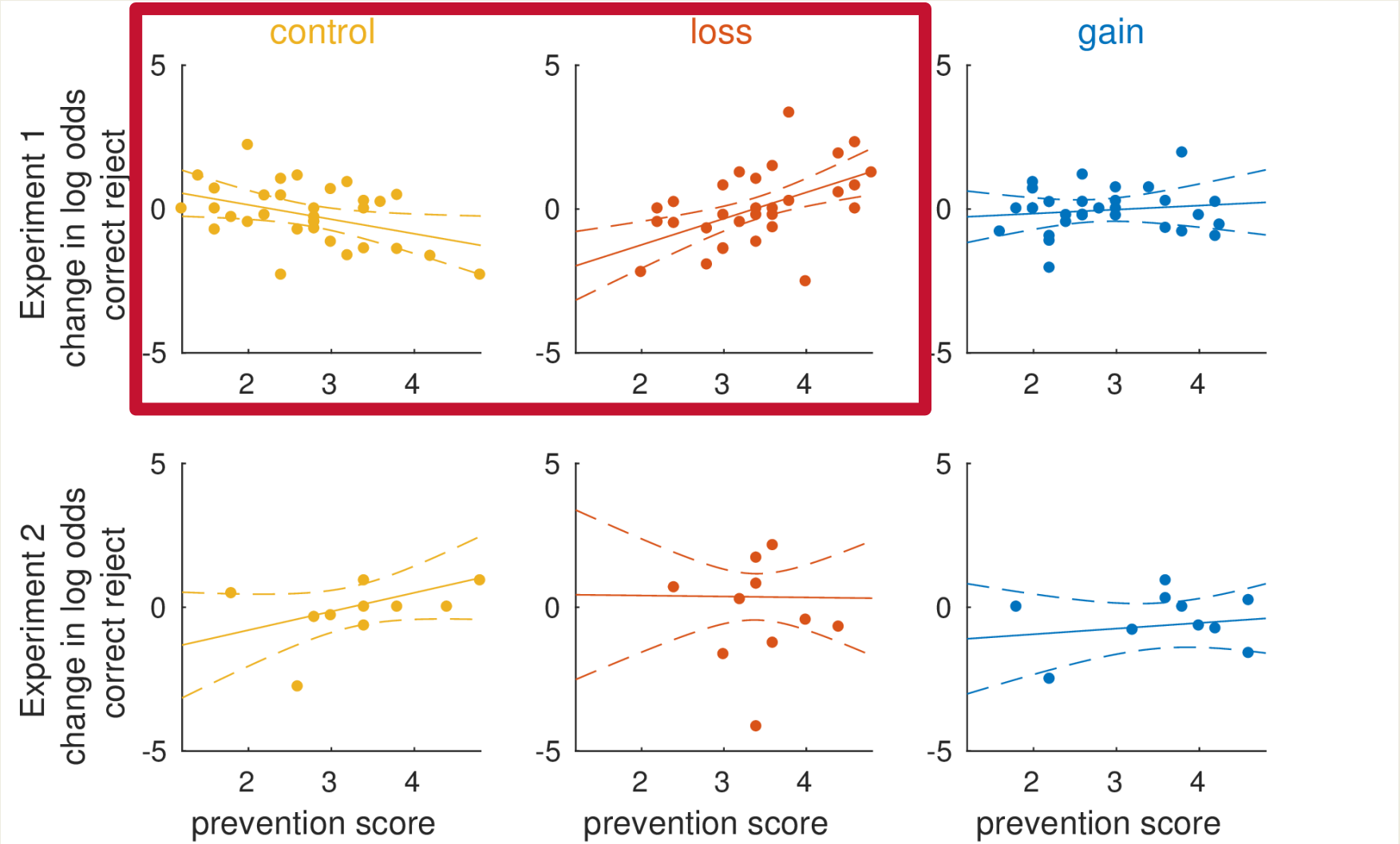
Transfer Accuracy

Why?
Implications for GIFT



Accuracy on Transfer Task

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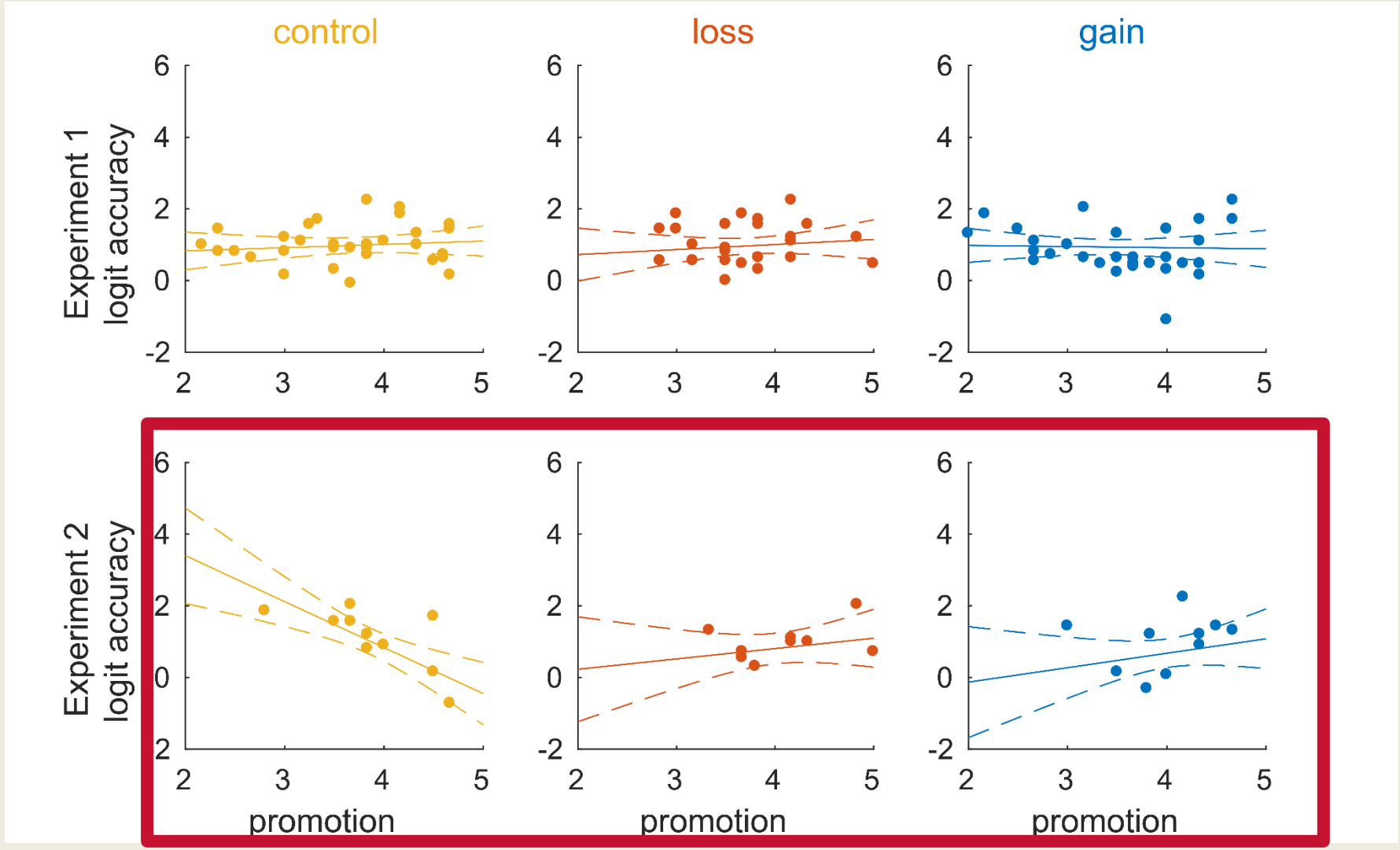
- **Transfer Accuracy**
- Why?
- Implications for GIFT



Why?

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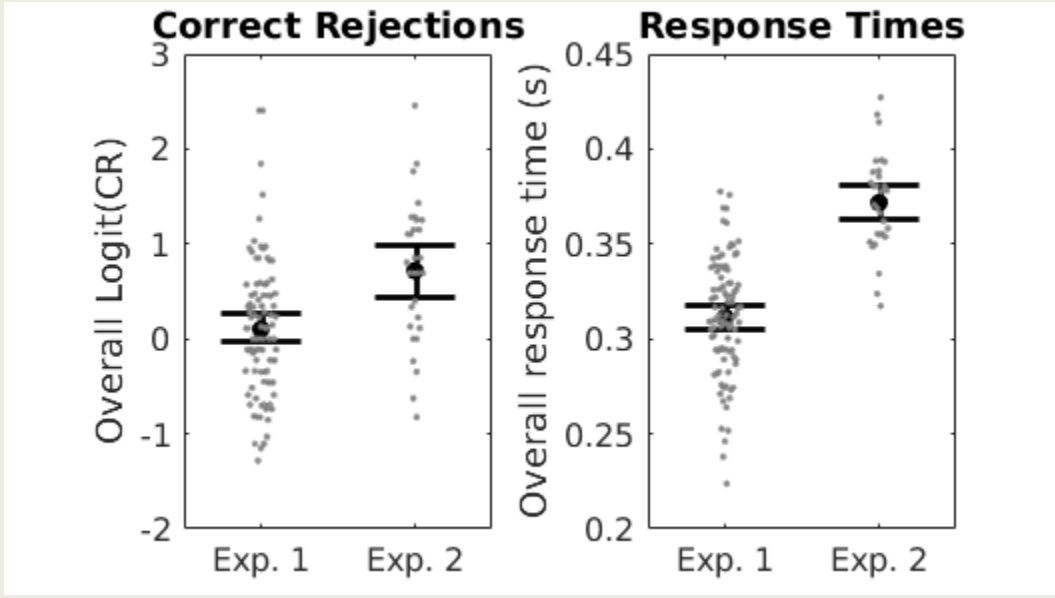
Why different effects? Strategic Affordances

Experiment 1



Experiment 2

To do well in Experiment 1, participants had to adopt an avoidant strategy to focus on correct rejections

To do well in Experiment 2, participants had to adopt an approach strategy to focus on response time

Implications for GIFT

1. Regulatory focus is an important individual trait worth including in learner models for improving training outcomes.

2. Regarding regulatory fit theory, a 3-way model of regulatory focus x feedback-framing x task strategic affordances may be more predictive of training outcomes than the traditional 2-way model of regulatory focus x feedback-framing.

3. Small differences in training tasks, such as the timing differences in our study, may substantially affect the way that human variability dimensions interact with feedback framing and other personalized training interventions.