

# Operator Sensitivity to Target-Present and Target-Absent Warning Signals in a Difficult Visual Search Task

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## Introduction

### Objective:

- How does dependency on a search aid change as the aid become more or less accurate during use?
- Are compliance and reliance symmetrical as aid accuracy shifts?

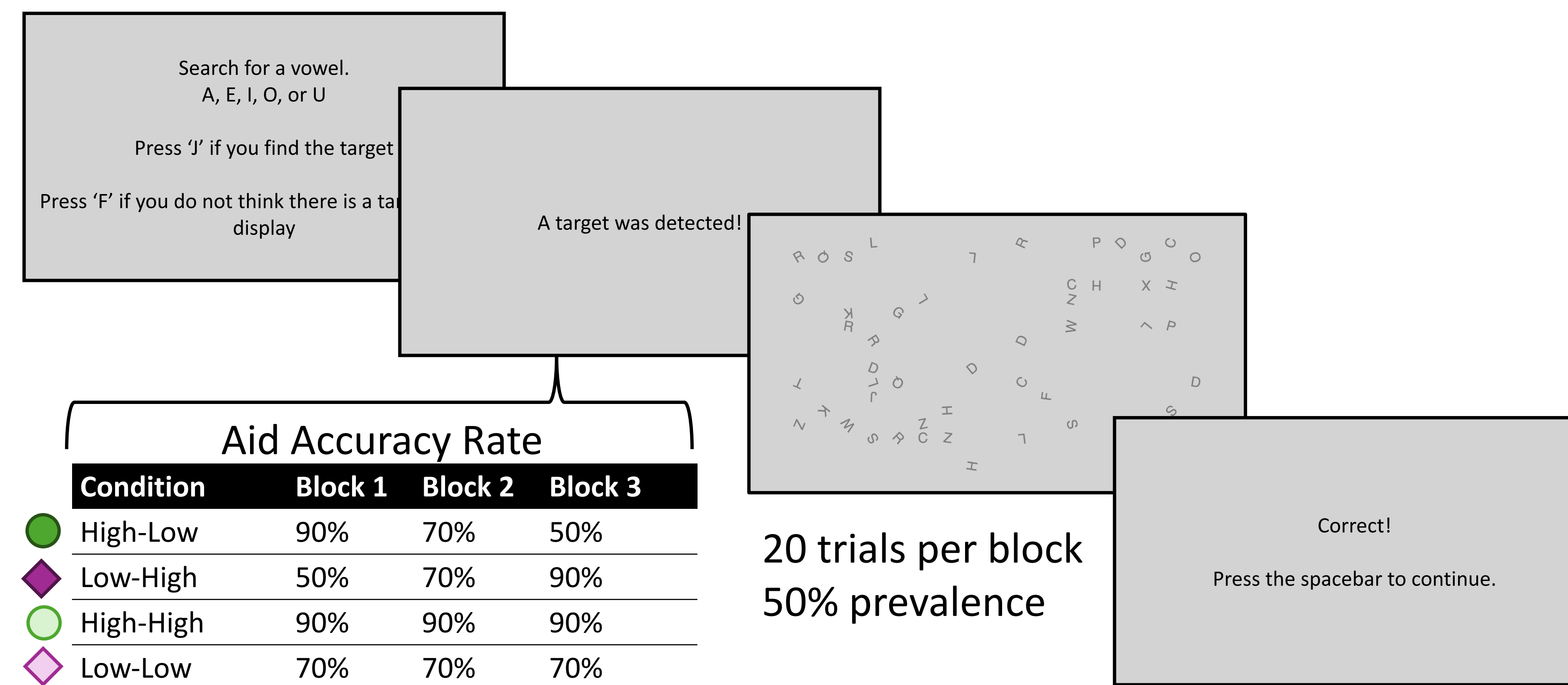
### Background:

- Computer vision tools can be helpful for difficult, high-impact search tasks.
- Prescreening tools can flag items that likely have a target but are subject to error.
- Users develop “trust” in a system based on its accuracy.
  - Compliance: Dependency on Target-Present Signals
  - Reliance: Dependency on Target-Absent Signals
- Users are sensitive to miss and false alarm aid errors.
- Visual search involves decisions about identifying targets and when to stop searching.
  - For target-present trials, there is a signal to verify the aid’s accuracy.
  - For target-absent trials, there is not a strong external signal about when to stop searching.

## Method

- Participants:** N = 160  
Age 18 - 50 ( $M = 20.8$ ); 84% Women
- Materials:** 60 trials of 50 rotated English capital letters. Vowels served as the target category.
- Design:**  
4 (aid accuracy) x 2 (target presence) x 3 (block) mixed design

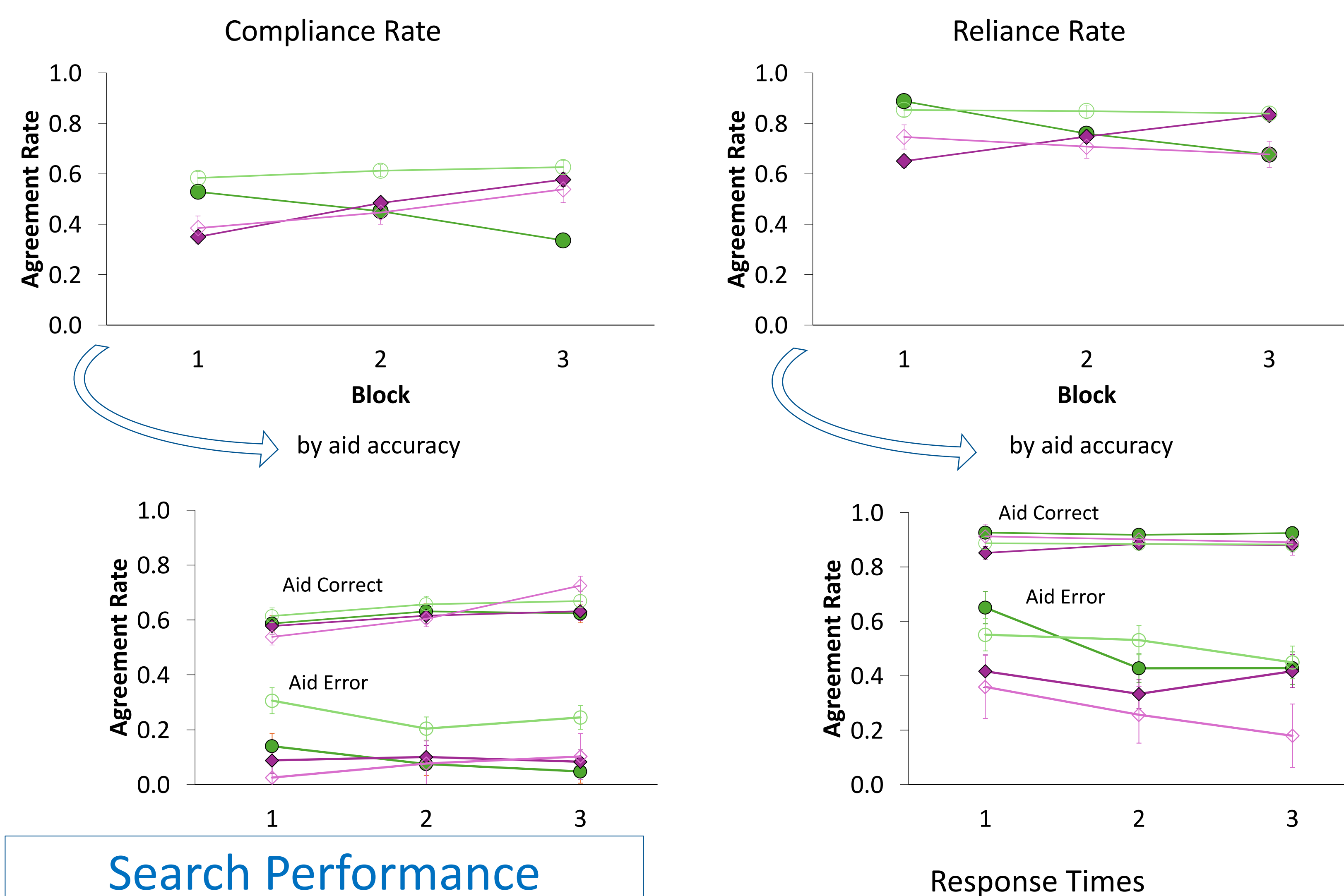
## Procedure



Aid Accuracy Rate			
Condition	Block 1	Block 2	Block 3
● High-Low	90%	70%	50%
◆ Low-High	50%	70%	90%
○ High-High	90%	90%	90%
◇ Low-Low	70%	70%	70%

## Results

### Dependency



### Search Performance

