

# Factors in Non-Expert Response to Robot Failure

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## Overview

- Main goal: Assess possible factors contributing to a non-expert's reaction to a robotic failure.
- Factors considered are: Risk, Human Involvement/Proximity and Severity of Failure.

## Motivation

- As robotics technology advances an increasing number of individuals without a robotics background will be expected to interact with robots on a semi-regular basis.
- Non-experts without a full understanding of the robots they're interacting with may react in an unhelpful, or even negative manner when a robot fails at a basic task. Even though the error may have been correctable through simple human intervention.
- By understanding what factors go into how non-experts react to these failures the robots themselves can be designed to encourage helpful reactions when the robot simply requires basic assistance.

## Methods

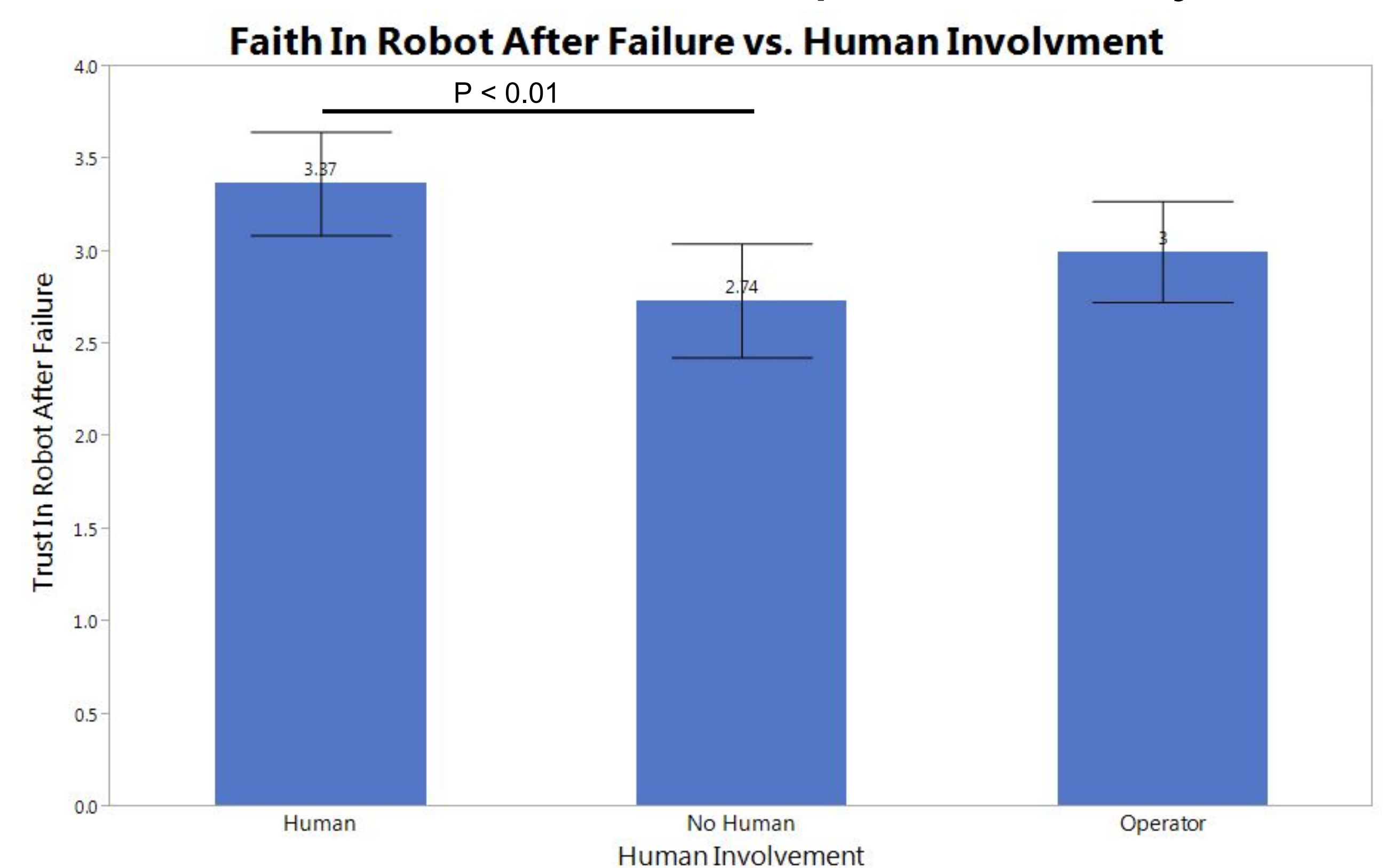
- 3 factors measured: Risk, Severity, and Human Involvement
- 4 levels of Risk, 3 levels of Severity, and 3 types of Human Involvement.



- 252 MTurk participants each randomly shown 1 of 36 videos and asked to respond to survey.

## Initial Results

- Initial results based on 252 person study



- This matches with the subjective comments made by participants some of whom said the human rather than the robot was to blame.

## Discussion/Future Research

- The presence of a human participant had a significant positive impact on people's opinion of the robot after the failure. Comments suggest this is because some of the blame for the failure was shifted onto the human participant. How blame is assigned in these scenarios should be further investigated.
- What impact the presence of eyes have people's perception of the robot should be a variable in a future study.
- An in-person study is planned based on the results of the online survey.



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