

# Surprise affects hindsight bias for car crashes: Or does it?

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## Key Question

How does surprise affect visual Hindsight Bias for dynamic events?

## Introduction

**Hindsight Bias (HB):** Overestimating one's own or others' prior knowledge when outcome is known (Fischhoff, 1975)

**Calvillo and Gomes (2011)** (Figure 1):

- No HB for low surprise crashes
- HB for medium surprise crashes
- Reverse HB for high surprise crashes
- Sense-making as an explanation for HB

We attempted to replicate and extend Calvillo and Gomes (2011) to examine the effect of driving experience on HB

## Method

26 Kwantlen students (19 female, 7 male)

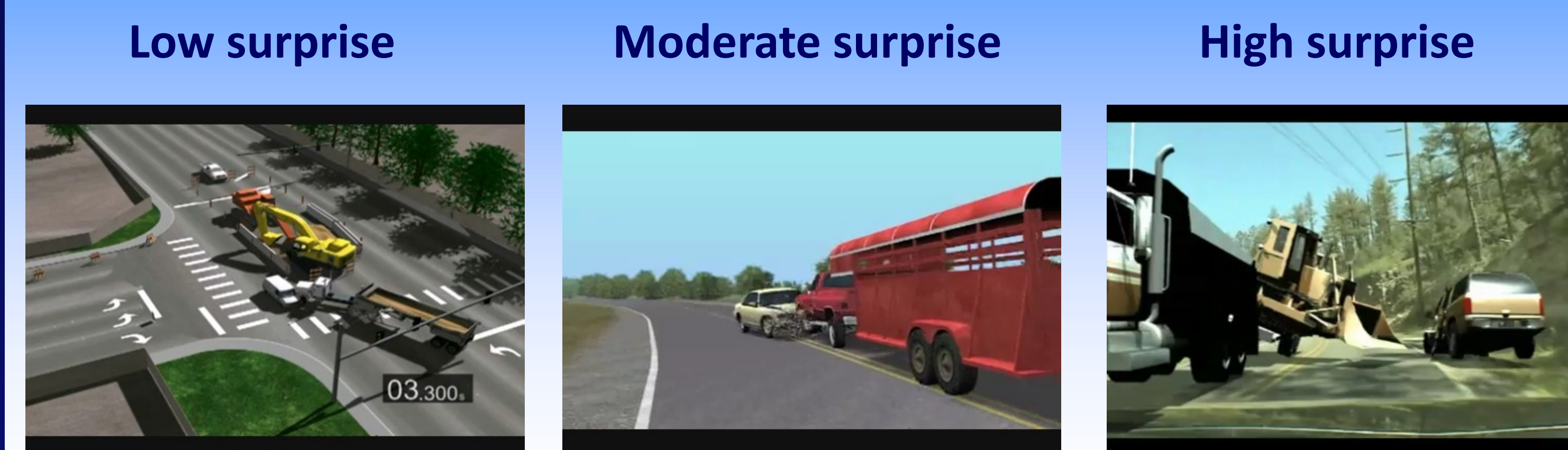
Car crash animations grouped into low, moderate and high surprise

**Foresight:** Participants stopped each video when certain that a crash would occur

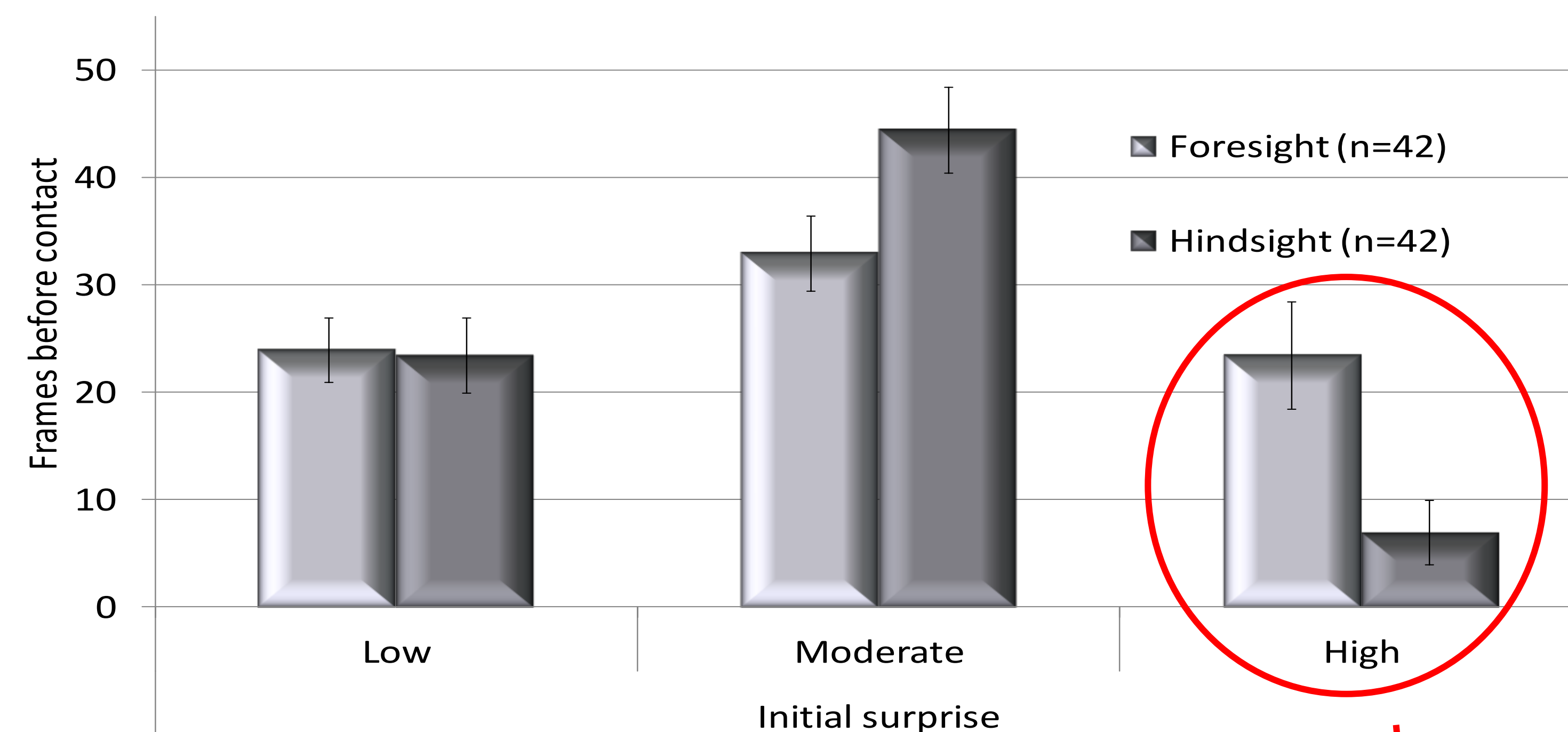
**Hindsight:** Participants watched each video twice, stopping the second play when they thought a naïve peer would be certain that a crash would occur

Driving experience measured through self-report (high, medium, low)

## Stimuli

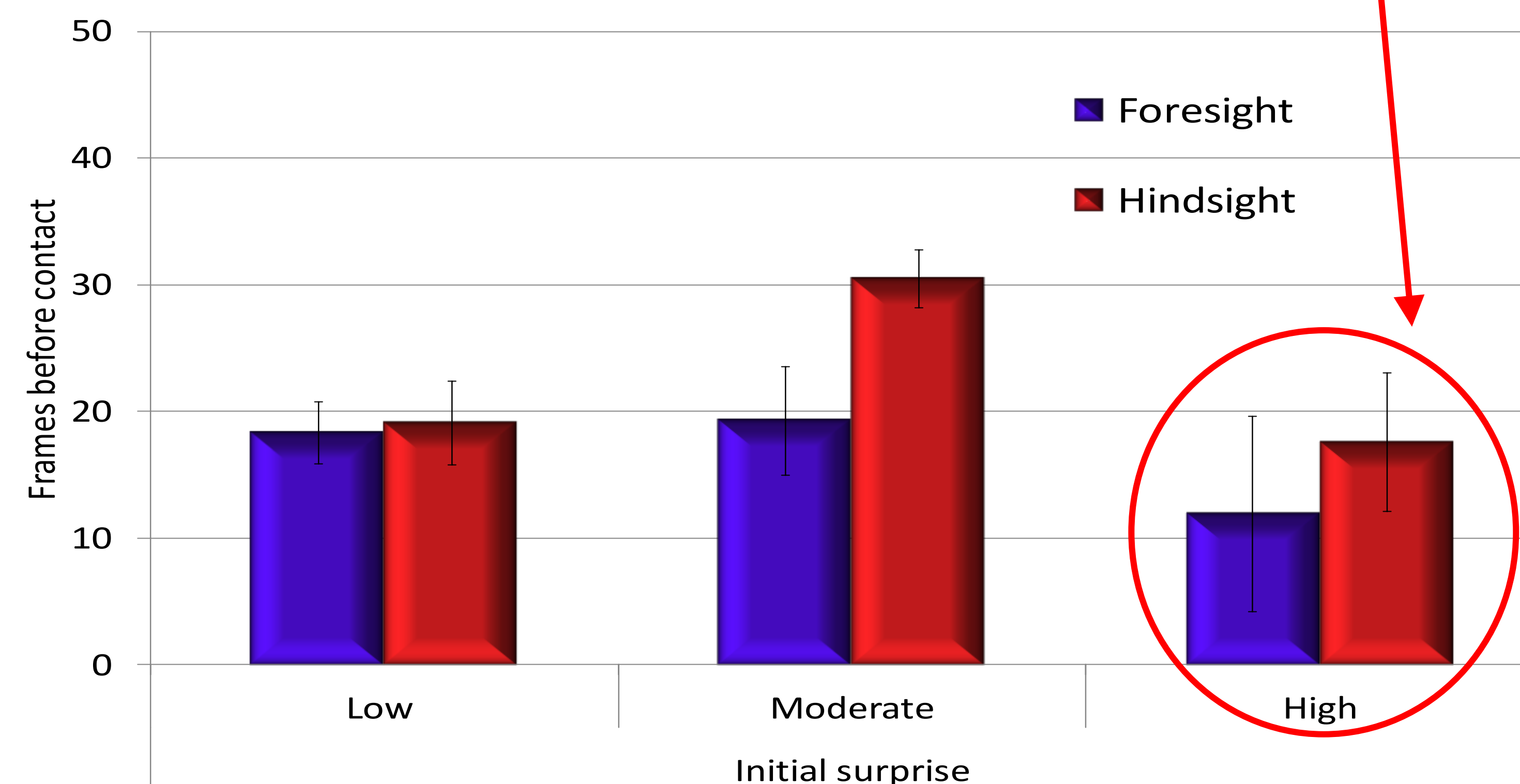


**Figure 1:  
Calvillo & Gomes Frames before contact  
(Between subjects)**



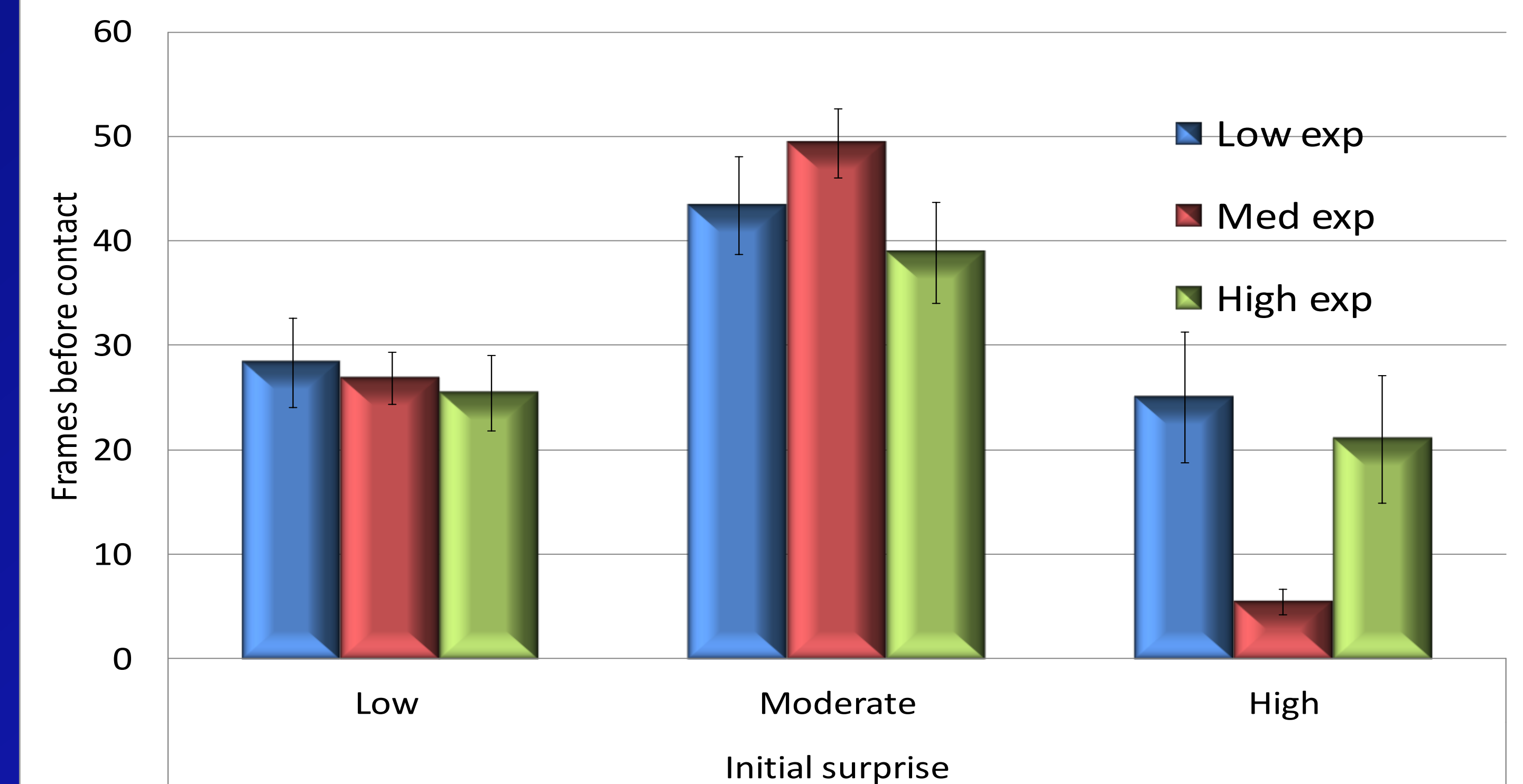
## Failure to replicate

**Figure 2: Frames before contact  
(Within subjects, N=26)**

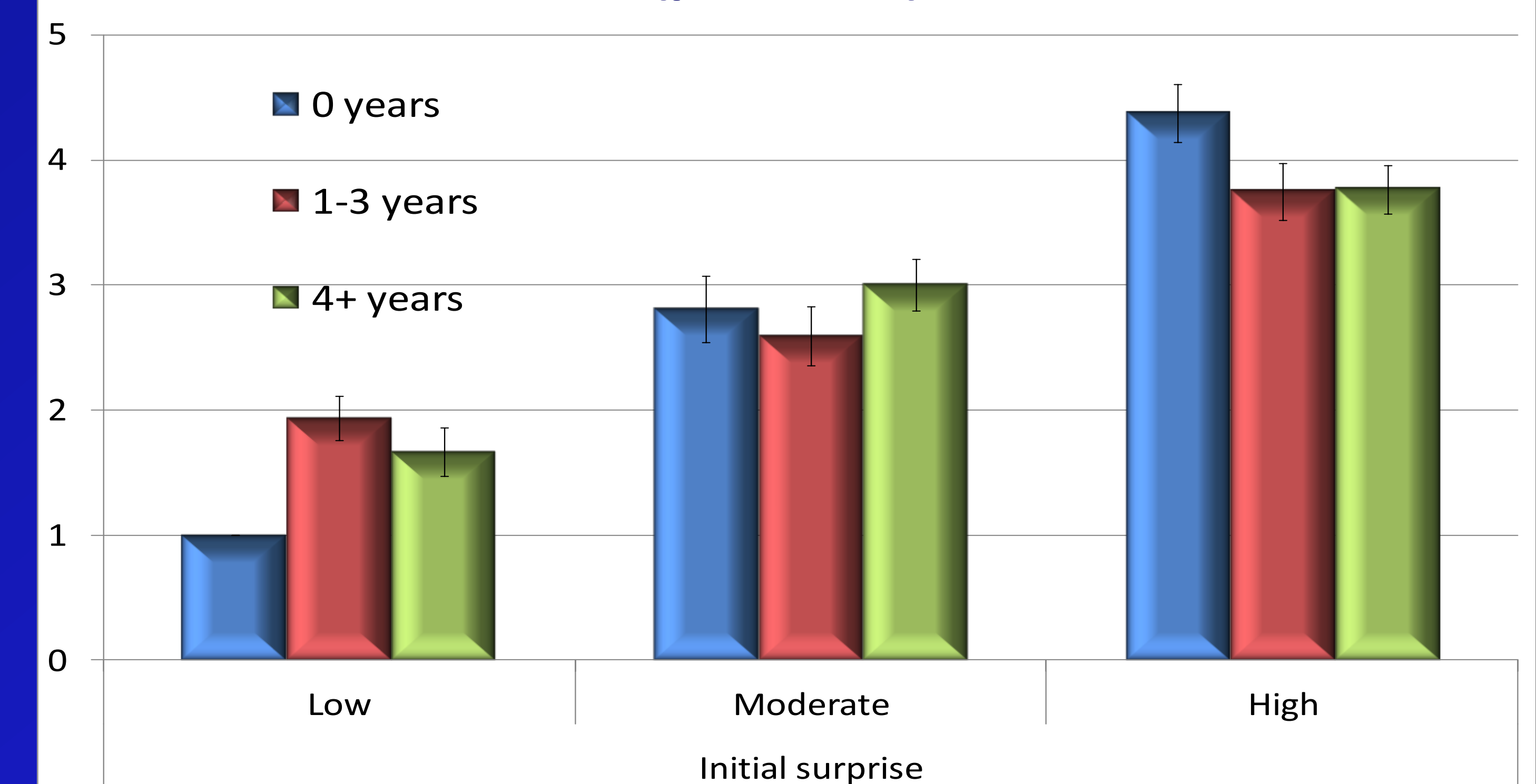


• Error bars represent the standard error of the mean.

**Figure 3: Hindsight estimates  
(broken down by perceived experience)**



**Figure 4: Surprise ratings by driving experience  
(pilot data)**



## Discussion

Replicated Calvillo and Gomes (2011) HB for moderate surprise but did not replicate reverse HB for high surprise (Figure 2). Why?

We suggest students' perceived driving experience as a factor (Figure 3)

## Conclusion

**Hindsight Bias for car crashes depends on perceived driving experience**

## References

Fischhoff, B. (1975). Hindsight ≠ foresight. *Journal of Experimental Psychology: Human Perception and Performance*, 1, 288-299.  
Calvillo, D. and Gomes, M. (2011). Surprise influences hindsight-foresight differences in temporal judgments of animated automobile