



Intuitive Confidence Reflects Speed of Initial Responses in Point Spread Predictions



Alexander Walker, Jonathan Fugelsang, Derek Koehler, University of Waterloo, Department of Psychology

Introduction

Previous research suggests that when faced with a choice conflict between equally valid intuitive and non-intuitive alternatives people often exhibit intuitive biases by choosing in favour of the intuitive alternative.

According to Simmons and Nelson (2006), intuitive biases are predictably non-universal. That is, they arise when intuitive confidence is high and constraint magnitude is low.

- ◆ **Intuitive Confidence:** The degree of confidence in one's intuitive choice
- ◆ **Constraint Magnitude:** Information that opposes one's intuitive choice

We sought to investigate the determinants of intuitive confidence. Specifically, we set out to investigate whether intuitive choices that were generated quickly would be more likely to be endorsed in a choice conflict situation.

Intuitive Confidence in a Sports Betting Domain

In a sports betting domain, making a prediction in favour of the "favourite" (the team deemed most likely to win the game) can be viewed as the intuitively appealing alternative since making this prediction comes easily to mind.

Predictions were made with and without reference to a point spread:

- ◆ **Point Spread:** The amount of points subtracted from the "favourite" at the end of a game for the purposes of equating the likelihood that either team will be the "winning" team with regards to a bet.

Hypotheses

In attempt to replicate the three main findings of Simmons and Nelson (2006) in Experiment 1, we put forth three identical hypotheses:

- ◆ **Intuitive Biases:** People will predict favourites more often than underdogs when making predictions against the spread (ATS).
- ◆ **Constraint Magnitude:** People will predict favourites ATS less frequently as point spread magnitude increases.
- ◆ **Intuitive Confidence:** People will predict favourites ATS more frequently as confidence in intuitions increases.

Additionally, a more primary focus of Experiment 1 was to investigate whether initial "who will win the game" predictions bias later predictions made ATS.

In Experiment 2 we tested a novel prediction:

- ◆ **Response Time:** The faster people are to predict a winner of a game the more likely people will be to predict the favourite ATS for that game.

References

Simmons, J. P., & Nelson, L. D. (2006). Intuitive confidence: Choosing between intuitive and nonintuitive alternatives. *Journal of Experimental Psychology: General*, 135(3), 409-428.

Experiment 1

Goal

Investigate whether initial "who will win the game" predictions bias later predictions made ATS.

Methods

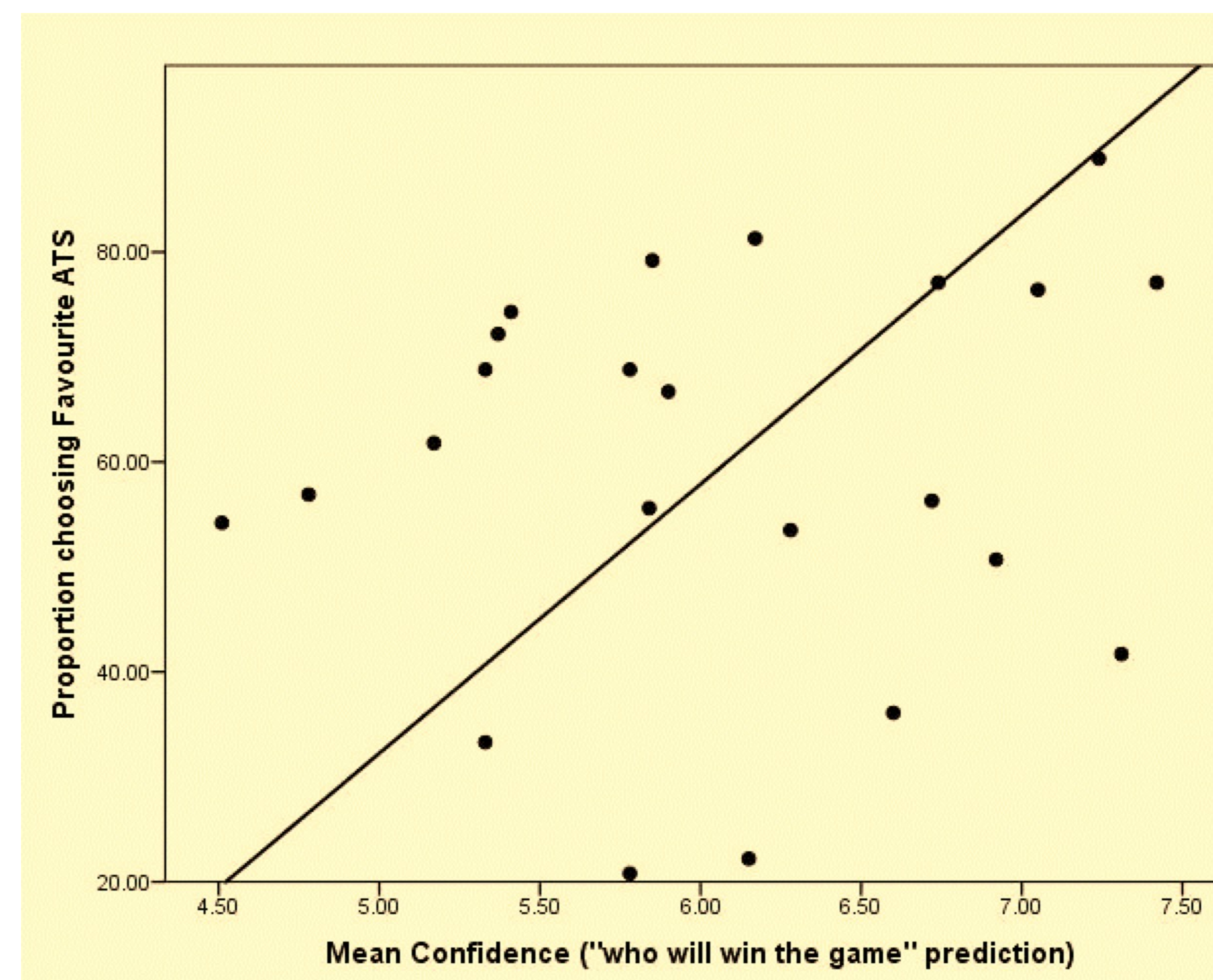
- ◆ 400 participants were recruited from Amazon Mechanical Turk. Participants who failed to pass our point spread tutorial did not proceed to complete Experiment 1 (N = 100).
- ◆ Participants predicted the outcomes of 23 National Basketball Association (NBA) games.
- ◆ Participants were presented a table of cues for each game which informed them of the quality of the two teams.

	Home Team	Visiting Team	
Record	36-19	19-34	Record
Home Record	22-7	7-17	Away Record
Points Scored Per Game	107	100.2	Points Scored Per Game
Points Allowed Per Game	101	104.2	Points Allowed Per Game

- ◆ Participants were randomly assigned to one of two conditions:
 1. **Win ATS Condition:** For each game, participants first predicted who they believed would win the game and then made a prediction against a stated point spread.
 2. **ATS Only Condition:** Participants only made predictions against a stated point spread.

Results

- ◆ Predictions made ATS did not differ significantly between conditions ($t(44) = -.784, p = .437$) suggesting that initial "who will win the game" predictions did not bias later predictions.
- ◆ **Intuitive Biases:** Favourites were chosen ATS 60.3% of the time ($t(45) = 4.49, p < .001$).
- ◆ Both constraint magnitude (i.e., point spread magnitude) and intuitive confidence (i.e., confidence ratings for "who will win the game" predictions) were shown to be significant predictors of participants' choices ATS ($p < .001$ in both cases).
- ◆ The greater the intuitive confidence, the more likely participants were to predict the favourite ATS.
- ◆ The greater the point spread magnitude, the less likely participants were to predict the favourite ATS.



- ◆ Each data point represents one of the 23 National Basketball Association games presented in Experiment 1.
- ◆ Line represents the relationship between mean confidence and participants' predictions ATS with point spread held constant at its mean ($M = 5.54$).

Experiment 2

Goal

Investigate whether the speed at which participants choose the outright winner of a game can be used to predict which choices will be made against a point spread.

Methods

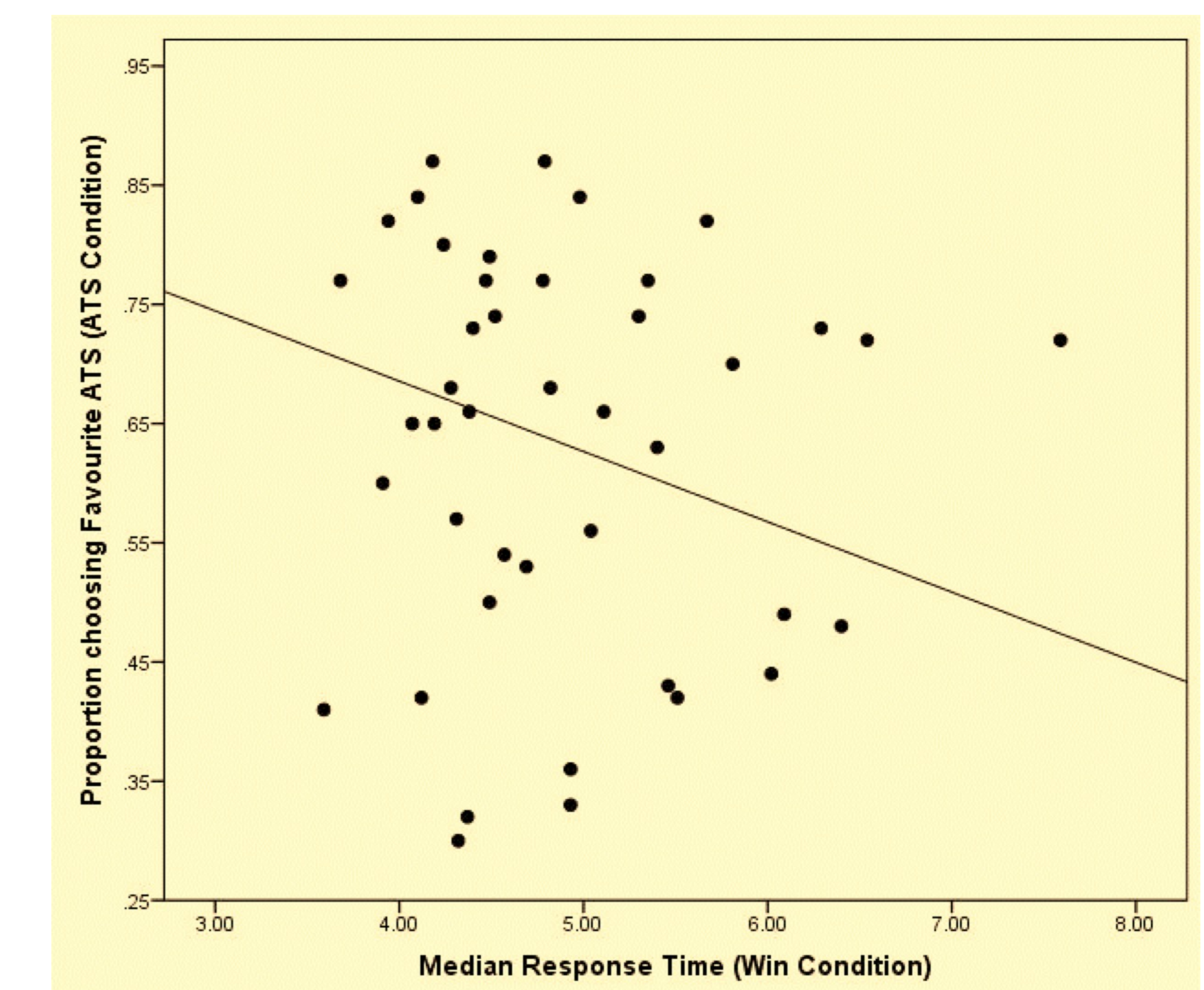
- ◆ 418 participants were recruited from Amazon Mechanical Turk. Participants who failed to pass our point spread tutorial did not proceed to complete Experiment 2 (N = 79).
- ◆ Participants predicted the outcomes of 20 (randomly from a pool of 43) NBA games.
- ◆ Participants were presented with a table of cues for each game which informed them of the quality of the two teams. The Home/Away record cue from Experiment 1 was not included in Experiment 2.

	Home Team	Visiting Team	
Record	12-43	33-24	Record
Points Scored Per Game	97.9	99.4	Points Scored Per Game
Points Allowed Per Game	106.3	98.3	Points Allowed Per Game

- ◆ Participants were once again randomly assigned to one of two conditions:
 1. **Win Condition:** Participants only made "who will win the game" predictions.
 2. **ATS Condition:** Participants only made predictions against a stated point spread.

Results

- ◆ **Intuitive Biases:** Favourites were chosen ATS 62.4% of the time ($t(42) = 5.18, p < .001$).
- ◆ The speed at which participants made their predictions to a particular game in the Win Condition was shown to be a significant predictor of participants' choices ATS for that game in the ATS Condition ($p = .047$). Specifically, the faster a game was responded to in the Win Condition the more likely participants were to predict the favourite ATS in the ATS Condition.



- ◆ Line represents the relationship between median response time and participants' predictions ATS with point spread held constant at its mean ($M = 5.40$).

Conclusions

- ◆ Participant's bias towards betting the favourite ATS is not dependent on participants first making predictions without reference to a point spread.
- ◆ The results of Experiment 2 suggest that intuitive confidence directly reflects the speed with which an initial response comes to mind.
- ◆ Thus, the faster an initial intuitive response comes to mind the more likely people will be to choose in line with their initial intuition when faced with a choice conflict situation.