

"I Know When to Sell"

The Over-optimism Bias and Debiasing in Stock Market Decisions

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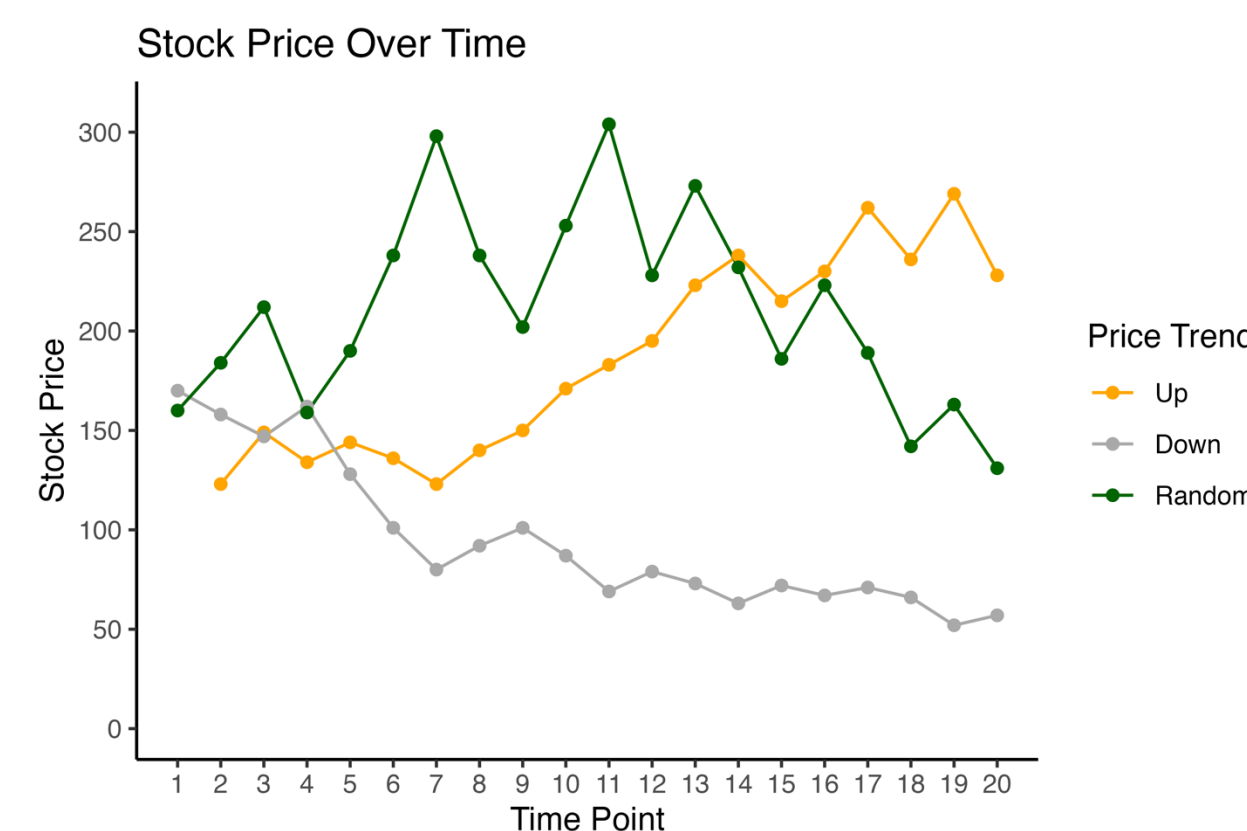
Introduction

- Investors often underperform by prematurely selling winners and retaining losers despite predetermined selling plans. (Heimer et al., 2023; Odean, 1998; Shefrin & Statman, 1985)
- Investors show skill in buying but underperform with selling due to increased reliance on heuristics. (Akepanidaworn et al., 2023)
- People in a "cold" state underestimate the impact of a "hot" state (e.g., anxiety) on their own behavior. (Loewenstein, 1996; Loewenstein, et al., 2003; Van Boven & Loewenstein, 2003; Van Boven et al., 2012).
- These findings raise questions about investors' ability to accurately predict their selling behavior.

Study 1

Do people hold stocks for as long as they expect to?

- 3 (Round 1 vs. Prediction vs. Round 2; within) x 3 (Upward vs. Downward vs. Random; between) mixed design.
- Investment games; out of 20 time points, participants decided and predicted when to sell stocks.
- DV: stock selling time (2-20 time points; never sell = 21).



Time Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Price (\$)	150	175	188	214	193	173	198	239	203	173	164	199	226	258	276	295	251	304	258	294

N = 265	DV	Price Trend	Incentives
Round 1	Would you sell now?	Up x 2, Down x 2, Random x 2 (6 Games)	Selling Price
Prediction	If you are going to play the same game in the future, when would you sell?		Prediction Accuracy
Round 2 (2 Weeks Later)	Would you sell now?	Up or Down or Random (1 Game)	Selling Price

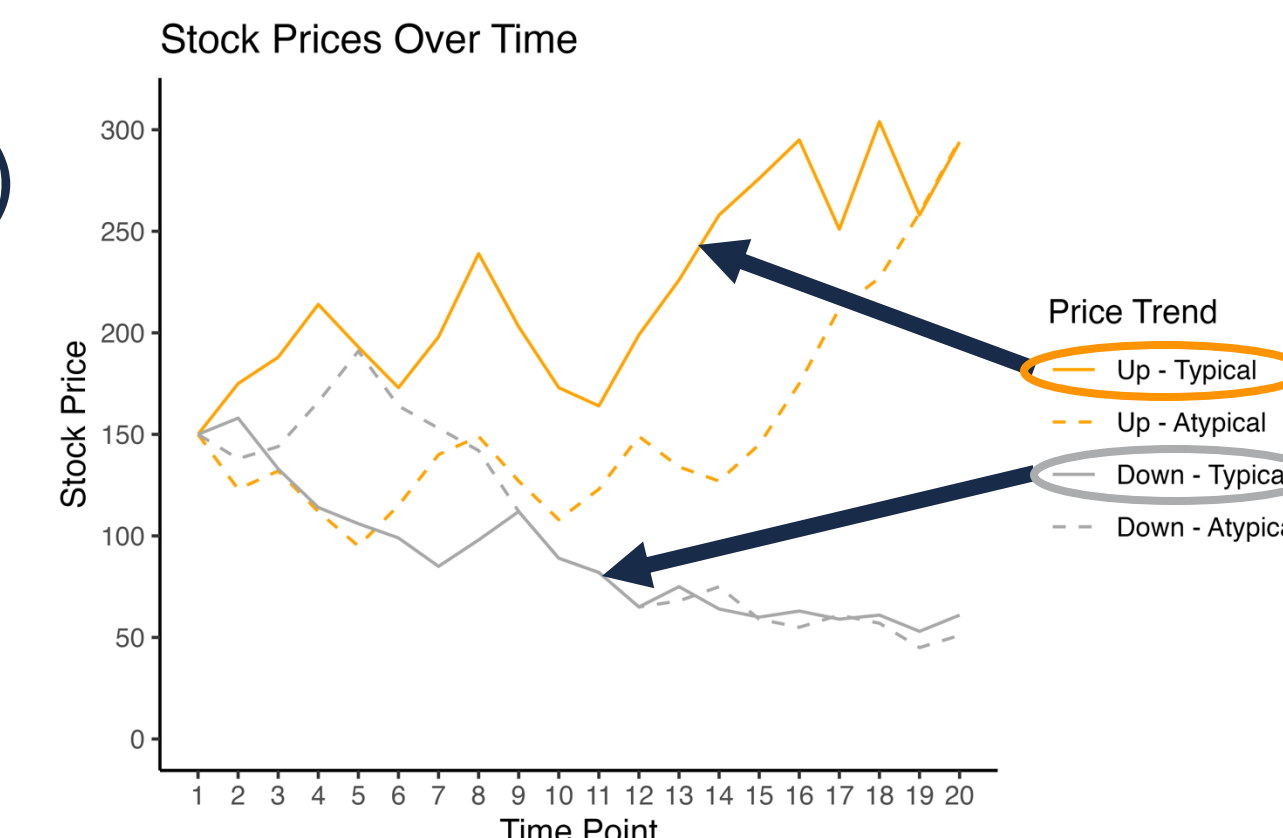
Summary

- Three incentivized studies (N=1,226) examined: 1) over-optimism in stock-holding predictions, 2) a debiasing approach, and 3) an underlying psychological mechanism.
- Participants consistently overestimated holding time for winning stocks and underestimated for losing ones, regardless of experience.
- Prediction errors decreased when participants simulated selling decisions individually, underscoring the role of contextual fidelity.
- Overestimation bias appeared only at high stakes, suggesting a hot-cold empathy gap as a potential factor.

Study 2

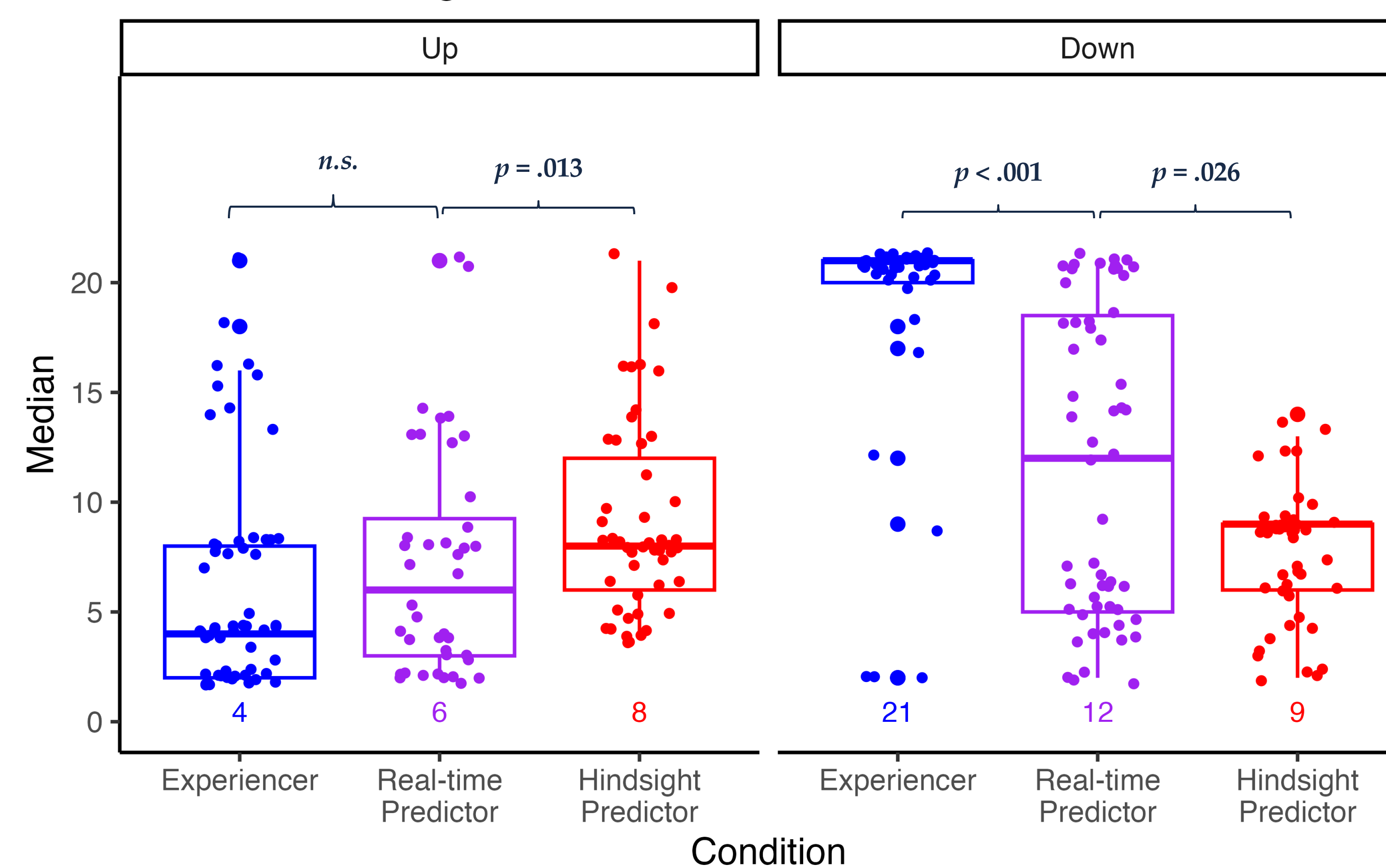
When do predictions improve?

- 3 (Experiencer vs. Real-time Predictor vs. Hindsight Predictor) x 2 (Upward vs. Downward) between-subjects design.
- Investment games: Participants decided when to sell stocks or predicted others' selling time.
- DV: stock selling time (2-20 time points; never sell = 21).



N = 583	DV	Price Trend	Incentives
Experiencer	Would you sell now?	Up or Down (1 Game)	Selling Price
Real-time Predictor	Have more than 50% of the experiencers sold by now?		Prediction Accuracy
Hindsight Predictor	When is the first time point when more than 50% of the experiencers have sold?		

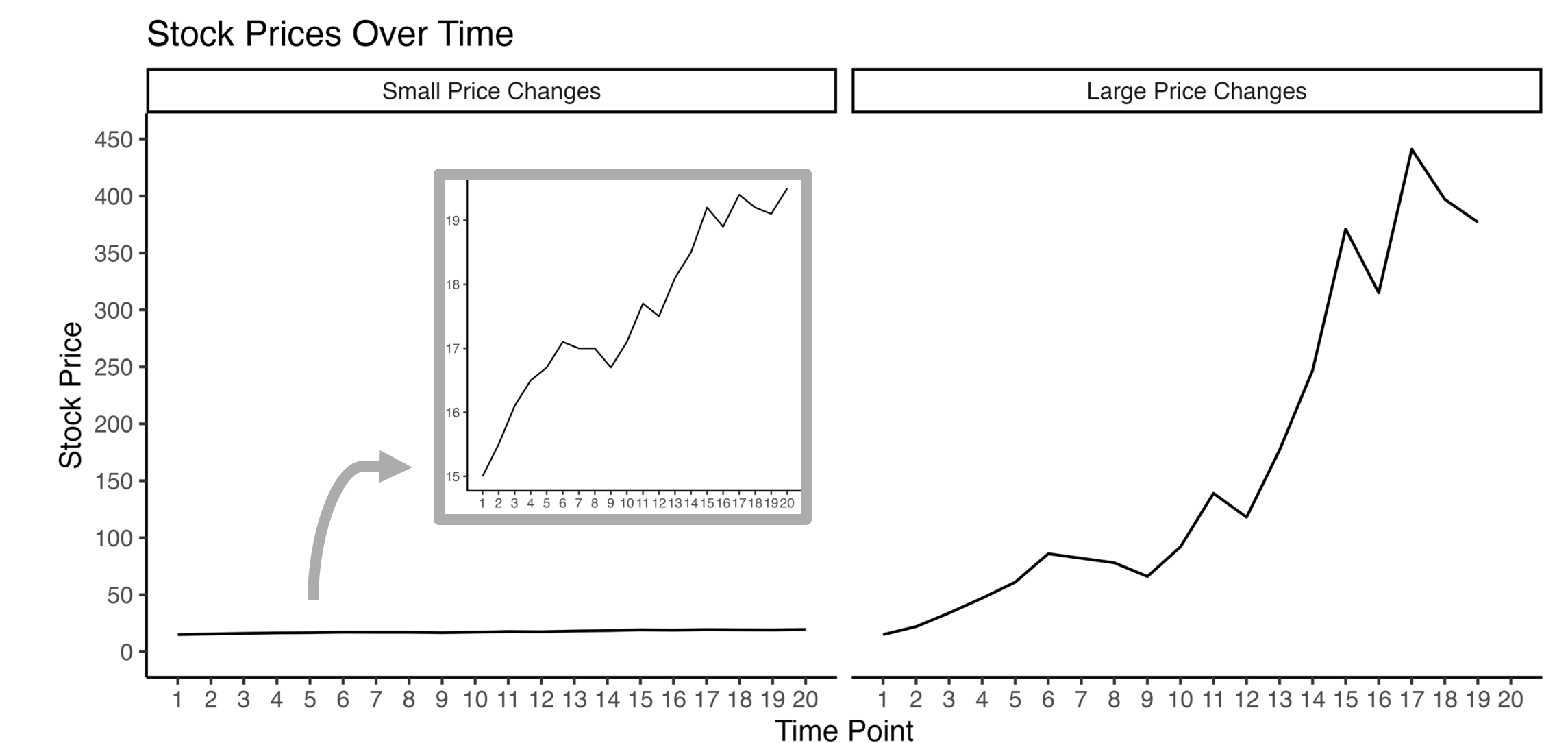
Median of Selling Time



Study 3

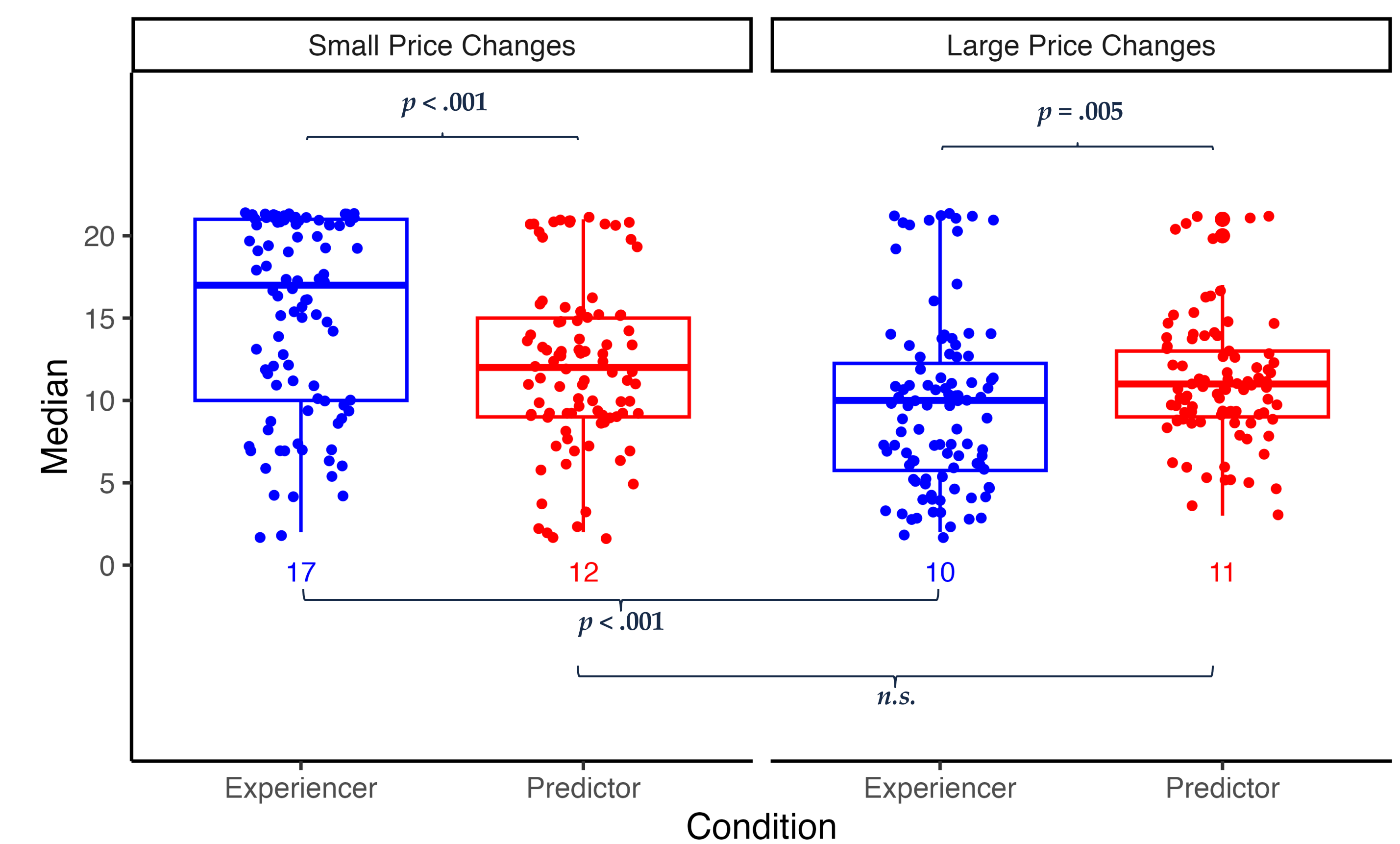
Why do predictions deviate from actual selling time?

- 2 (Experiencer vs. Predictor) x 2 (Small vs. Large Price Changes) between-subjects design.
- Investment games; out of 20 time points, they decided when to sell stocks or predicted others' selling time.
- DV: stock selling holding time (2-20 time points; never sell = 21).



N = 378	DV	Price Trend	Price Changes	Incentives
Experiencer	Do you want to keep your stock?	Up (1 Game)	Small or Large	Selling Price
Predictor	When is the first time point when less than 50% of the experiencers are still keeping their stock?			Prediction Accuracy

Median of Selling Time



References

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Median of Selling Time

