Interval Elicitation in a Prediction Market Reveals Lack of Anchoring "Bias"

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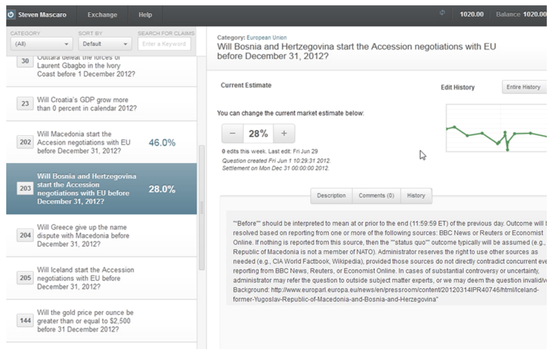
Prediction Market

To harness the "wisdom of crowds", researchers built an online combinatorial prediction market to forecast events of interest to the U.S. intelligence community. Prediction markets have a long history (See Rhode & Stumpf, 2004.), **and their value is described at length by** Surowiecki (2004).

People gain by investing in event securities that match the resolution. Market prices for a security are interpreted as the probability of the event, but the DAGGRE market possessed an interface to allow users to input probability judgments directly.



Regular elicitation showing market history

Anchoring

Prediction markets focus people on the trade history for the probability of an event. Do they exacerbate a typical cognitive "bias"?

Anchoring bias (Tversky & Kahneman, 1974) **can cause irrelevant information to influence judgment because people make insufficient adjustments from mental anchors. However, a market's *trade history might not be irrelevant*.**

Methods

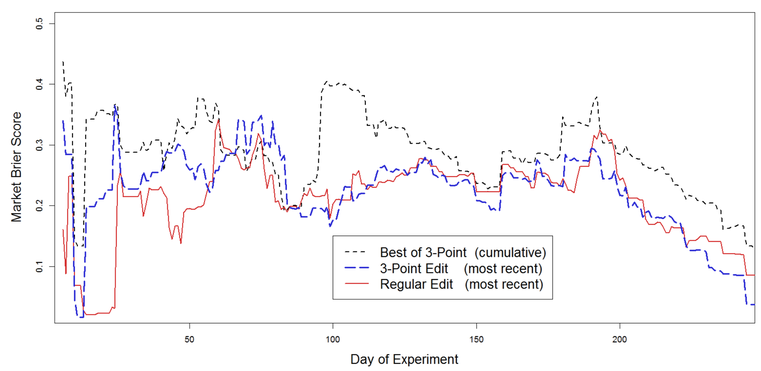
We randomly assigned half of forecasters to a new 3-point interface, while the other half used a regular 1-point interface.

In the 3-point condition, people provided highest, lowest, and best estimates. Only after they clicked "Commit", they saw the distribution of responses and history of market edits. Then they could edit the market themselves.

Results

Type of Forecast	Mean Brier Score (95% CI)
Best Estimate of 3-point group	0.74 (0.64, 0.84)
Timeliest Edit of Regular group	0.69 (0.55, 0.83)
First Edit of 3-point group	0.60 (0.45, 0.75)
First Edit Regular group	0.71 (0.60, 0.82)

Table of accuracy from active forecasters

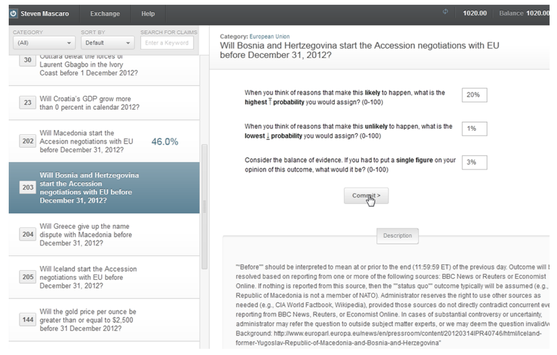


Graph of average daily Brier score for binary questions

Interval Elicitation

Intervals constructed by 3-point elicitation are more show less overconfidence (Soll & Klayman, 2004; Speirs-Bridge et al., 2010)**. However, 3-point elicitation requires more effort from participants than 1-point elicitation.**

Under 3-point elicitation, a person might assess multiple different hypotheses. Previous research (e.g., Einhorn & Hogarth, 1978) **points to the need for people to consider evidence for what initially seem like implausible outcomes, so we expect slightly greater accuracy in market edits after 3-point elicitation.**



Interval elicitation *without* market history

Conclusions

3-point *estimates* can't anchor on market history, but market *edits* by people in the 3-point condition show no difference from those in the regular condition.

3-point *estimates* might be less accurate, but market *edits* are equally accurate between conditions.

People in the 3-point condition make more initial *estimates* but fewer initial *edits* than people in the regular condition.

References

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