

Revised forecasts: The bolder, the better

Erik Løhre, Simula Research Laboratory, Oslo, Norway

Contact: erikloh@simula.no

Website: speakingofrisks.com

Abstract

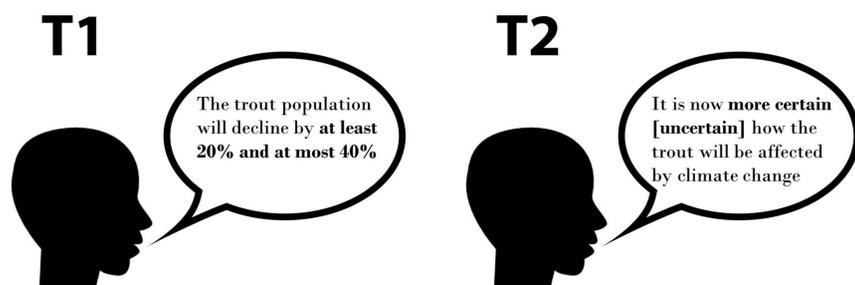
Lay people perceive climate change forecasts revised in an upward direction (e.g., a higher sea level rise predicted in light of new information) as more certain, compared to downward revisions. This indicates that people view probabilities as causal tendencies (propensities), and associate strong propensities with stronger (and sooner) outcomes.

Forecast revisions

- **Forecasts of future events sometimes have to be revised.** For instance, a climate researcher may update the forecast of future sea level rise from 20 cm to 40 cm in light of new information.
- **Lay people perceive trends in probability revisions.** Upward revisions of probability (T1: 60%, T2: 70%) appear more certain than downward revisions (T1: 80%, T2: 70%; Hohle & Teigen, 2015).
- **Outcome forecasts that are revised upwards may appear more certain than downward revisions.** People may view probabilities as causal tendencies, and think high probabilities (strong tendencies) signal strong and immediate outcomes (Keren & Teigen, 2001). Hence, upward revisions (stronger outcomes) may be perceived as more certain than downward revisions (weaker outcomes).

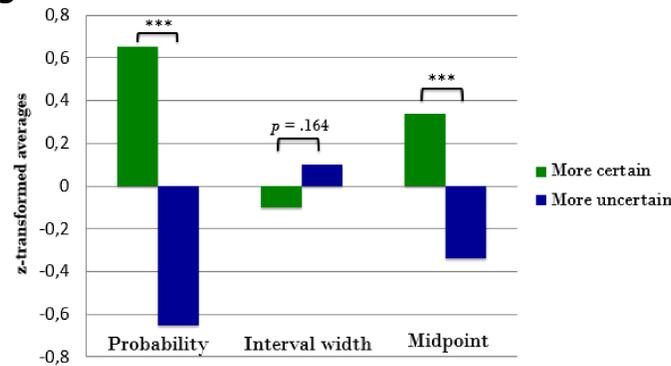
Experiment 1: More certain -> stronger?

A climate scientist releases two reports about the consequences of climate change for different species in the U.S.



Participants (150 MTurkers) were asked to guess what the probability level and the minimum and maximum estimates were at T2.

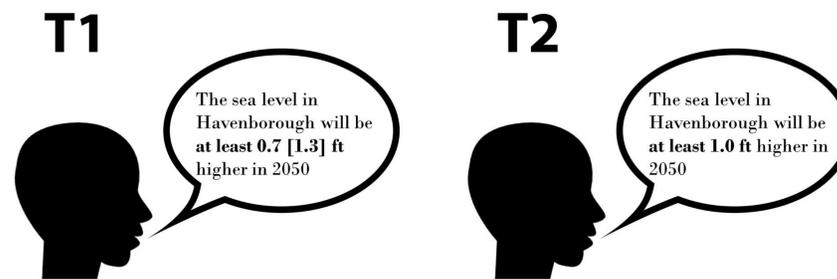
Results



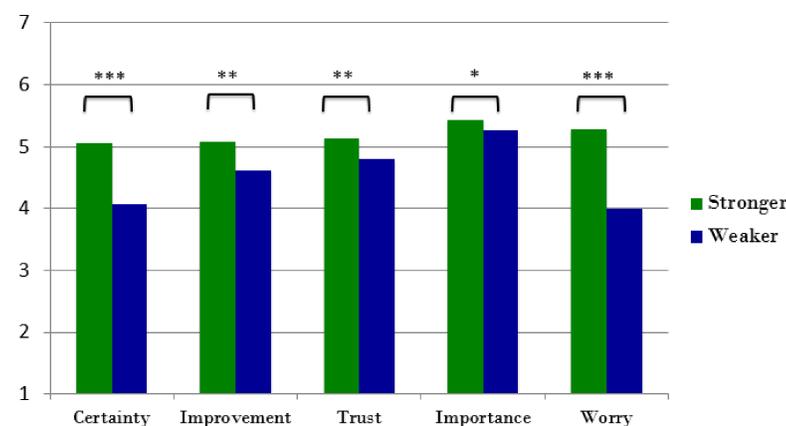
More certain (vs. uncertain) forecasts were associated with stronger (vs. weaker) outcomes

Experiment 2: Stronger -> more certain?

246 MTurkers were given upward or downward revisions of the lower or upper boundary of climate change forecasts, and were asked about their perceptions of the forecast and the expert.



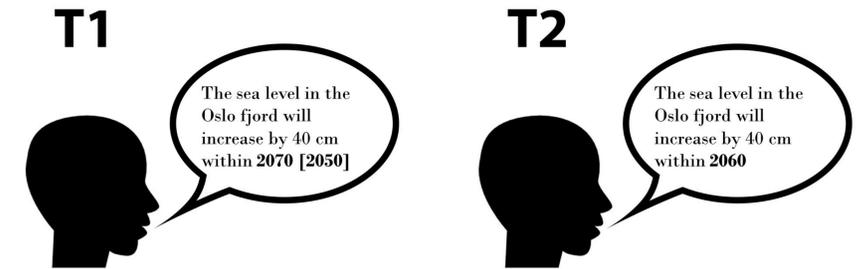
Results



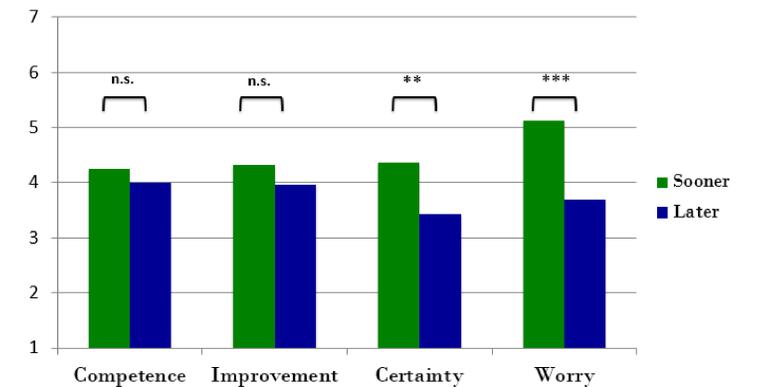
Forecasts were seen as more certain, and the expert as more trustworthy, after upward revisions than after downward revisions.

Experiment 3: Sooner -> more certain?

The propensity view predicts that high probabilities are associated with early occurrence. 105 student participants were given forecasts where time of occurrence was revised.



Results



Revisions indicating a sooner occurrence were rated as more certain than revisions indicating a later occurrence.

Conclusions

- **Forecasts of stronger outcomes are believed to reflect high forecast certainty, and vice versa**
- **Experts are seen as more trustworthy after revising their forecasts upwards**
- **The link between outcome strength and outcome certainty is consistent with a causal (propensity) view of probability**

References

- Hohle, S. M., & Teigen, K. H. (2015). Forecasting forecasts: The trend effect. *Judgment and Decision Making, 10*(5), 416-428.
- Keren, G., & Teigen, K. H. (2001). The probability-outcome correspondence principle: A dispositional view of the interpretation of probability statements. *Memory & Cognition, 29*(7), 1010-1021.