

A Simple Remedy for Overprecision in Judgment

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Abstract

This work offers a novel way to reduce overprecision in judgment. Results from two lab studies showed that overprecision is significantly reduced by forcing participants to consider the entire range of possible values, divided into intervals. **Subjective Probability Intervals (SPIs)** also reduced overprecision in subsequent estimates made using the conventional, 90% confidence interval method.

Overprecision, the excessive certainty in the accuracy of one's predictions, is the most robust and widely studied type of overconfidence (Moore & Healy, 2008). Although factors such as question framing and task difficulty were found to influence precision (Erev et al. 1994; Klayman et al., 1999), research has not yet been successful in getting people to consider a wider range of values when making estimates.

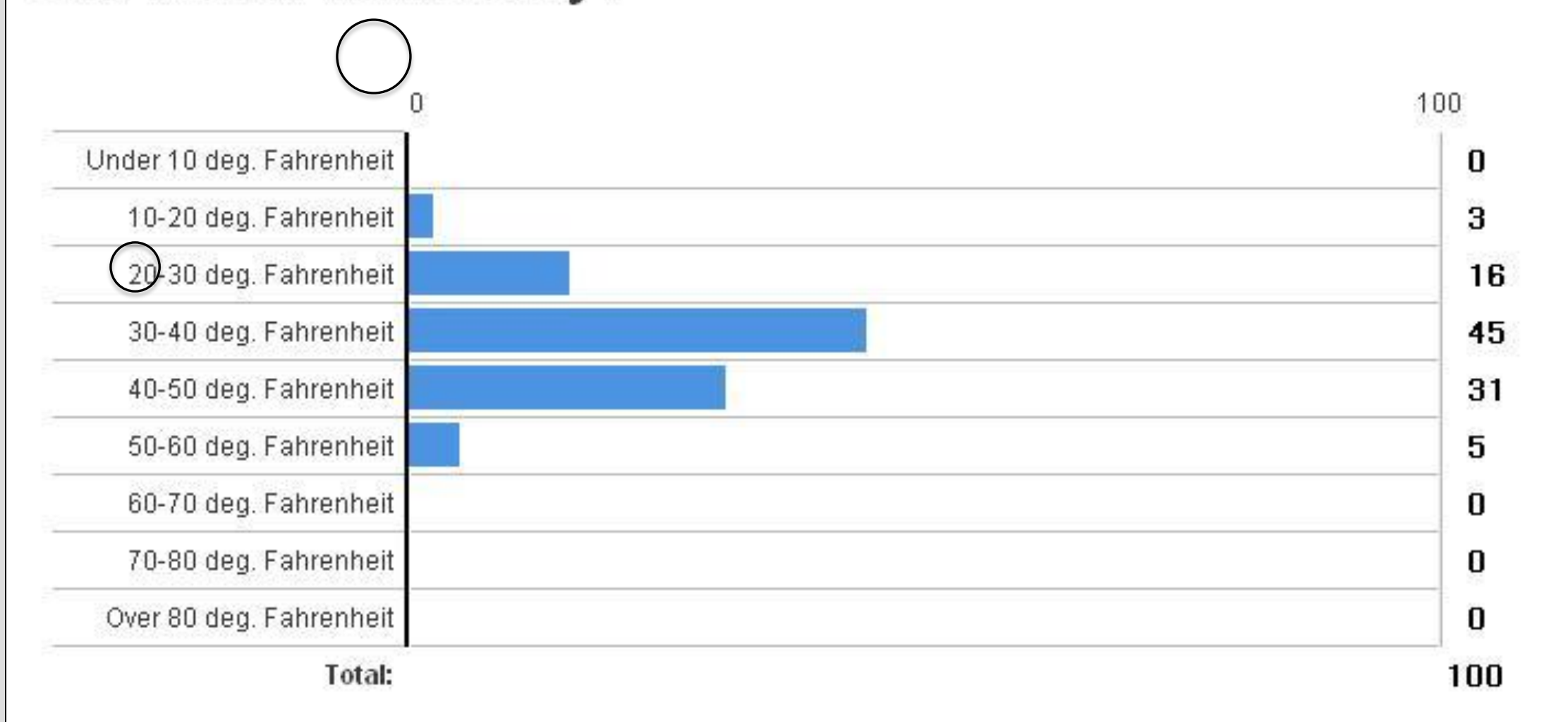
The present study offers a new method to reduce overprecision, called **Subjective Probability Intervals (SPIs)**. This method divides the entire range of possible values into several intervals, to which the estimator assigns a confidence level, for a total probability of 100%.

SPIs reduce overprecision by

1. Forcing estimator to consider all possible values;
2. Limiting the sum of confidence assigned to all values to 100%, preventing exaggeration of probability-confidence reports (Haran & Moore, in preparation).

We also predict that using SPIs in an initial set of estimates will induce a more thorough information search, thus lowering overprecision in subsequent estimates as well, regardless of the method used to making them.

What will the daily high temperature in Pittsburgh be exactly one month from today?



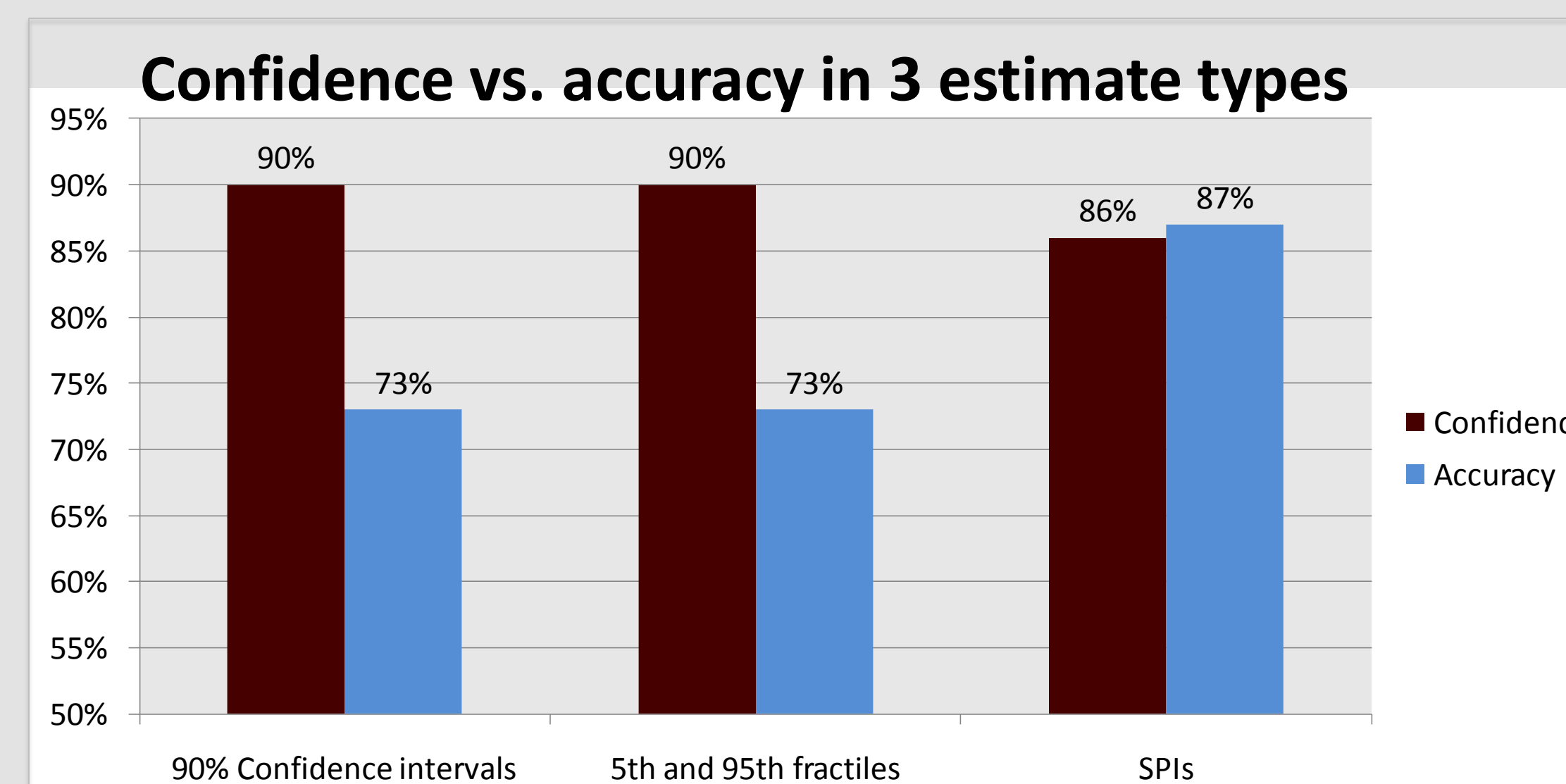
Study 1

SPI estimates are less biased

We compared overprecision levels of SPIs and other elicitation methods.

Participants estimated the high temperature in Pittsburgh, PA one month in the future. Each participant provided three estimates:

1. a 90% confidence interval;
2. 5th and 95th fractiles (values which the participant was 95% certain were lower and higher, respectively, than the true answer);
3. SPIs.



Participants displayed high levels of overprecision in their confidence intervals and fractile estimates.

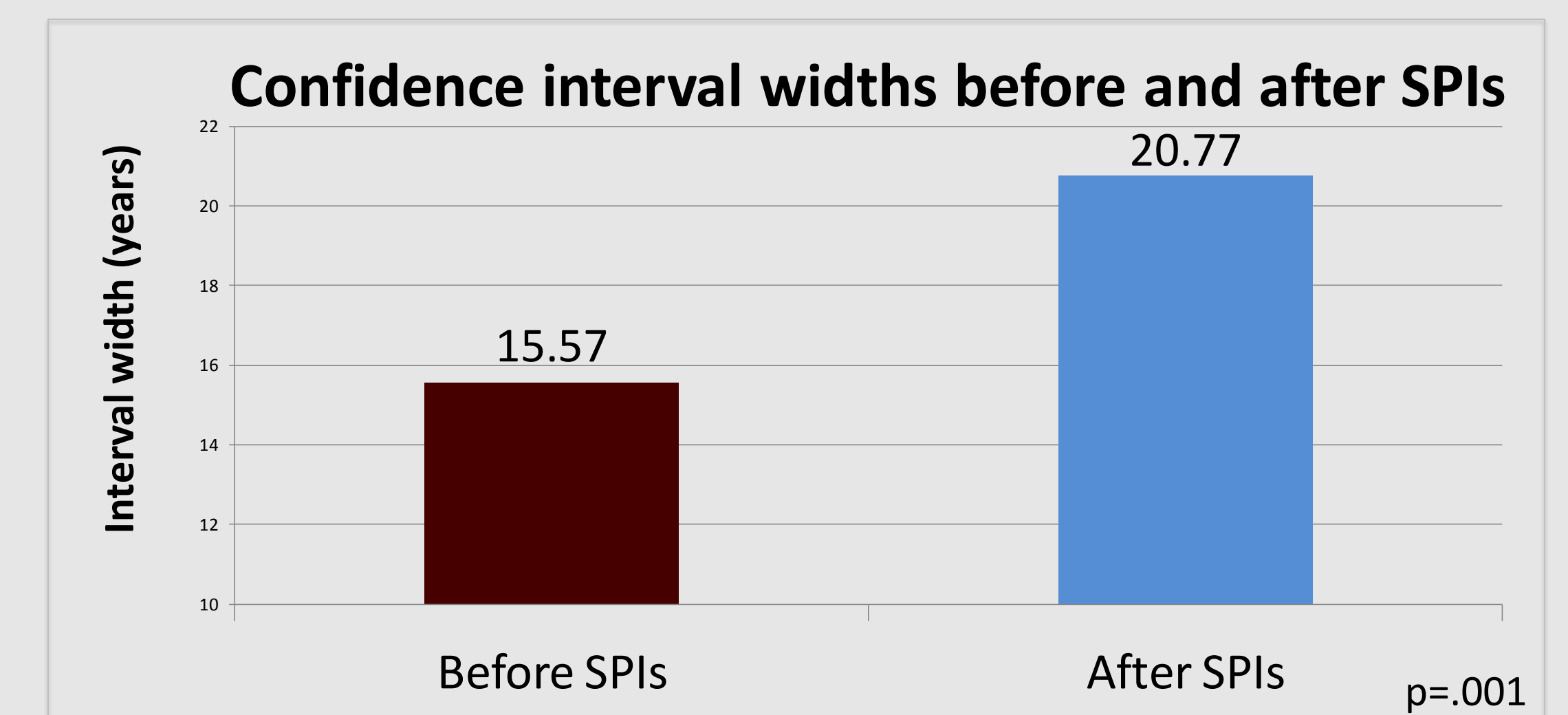
In SPIs, however, overprecision was eliminated.

Study 2

SPIs reduce bias in later estimates

We tested whether SPIs affect the precision of subsequent confidence interval estimates.

Participants estimated the years in which all 20th century U.S. presidents were elected to office. They made half of their estimates using 90% confidence intervals and the other half using SPIs. One group of participants estimated confidence intervals before SPIs, whereas the other group estimated SPIs before confidence intervals.



SPIs reduced overprecision in confidence intervals by inducing participants to provide wider intervals in subsequent estimates.

Conclusion:

Results from our two studies demonstrate the role of SPIs in significantly reducing overprecision from levels observed in other, more established methods. SPIs not only produced better-calibrated judgments in current estimates, but reduced overprecision in subsequent confidence interval estimates as well.

These findings help us advance the understanding of overprecision, and the search for ways to overcome it.

References:

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