No. 53.343

Representation Form of Perceptual Average

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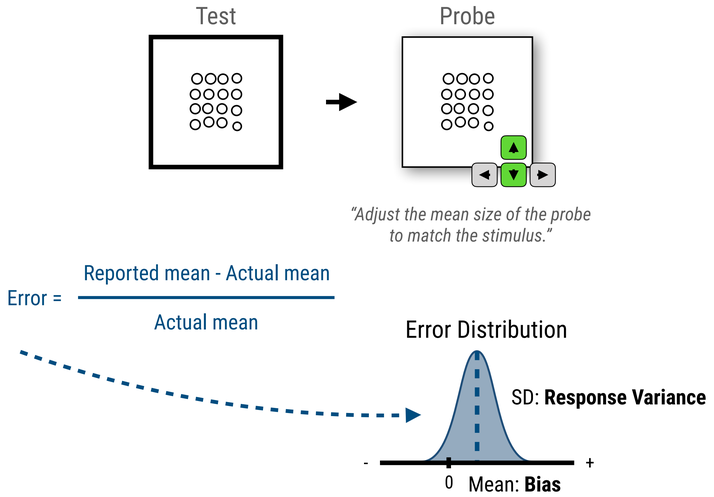
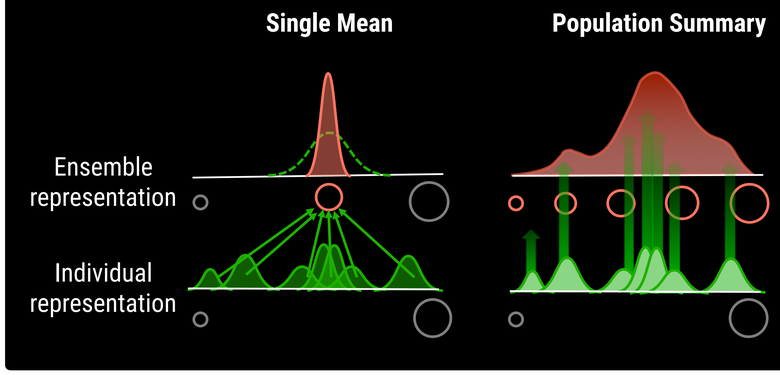
Is mean size represented as a single size?



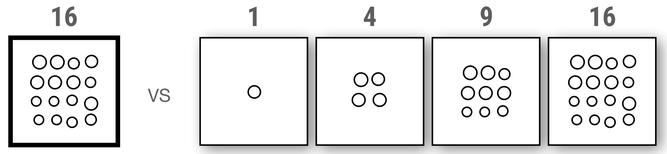
CONCLUSIONS

Mean size estimation with different set-size/variance/distributional shape ensembles yields conversion cost (bias).

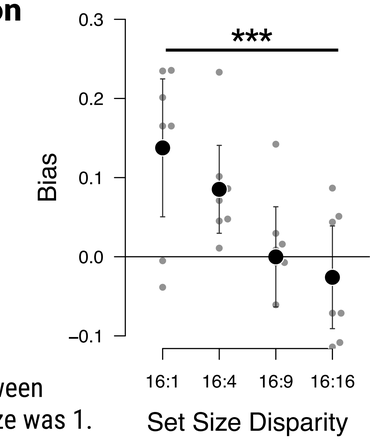
Ensemble is **not** simply represented **as a single mean but a population summary** that subsumes numerosity, variance, & shape of distribution.

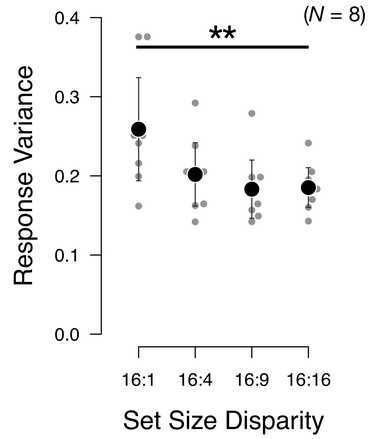


EXPERIMENT 1: Set size difference > mean size estimation

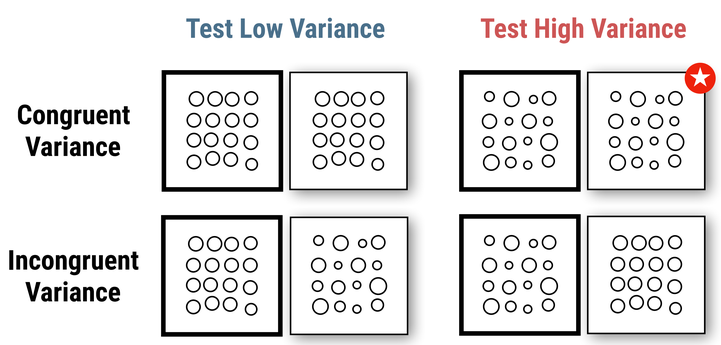


▶ Larger overestimation of the mean with larger set size differences between test & probe. Response variance was the largest when the probe set size was 1.

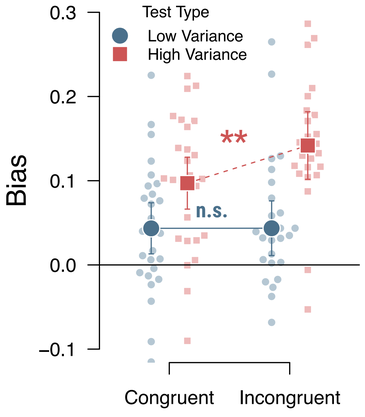


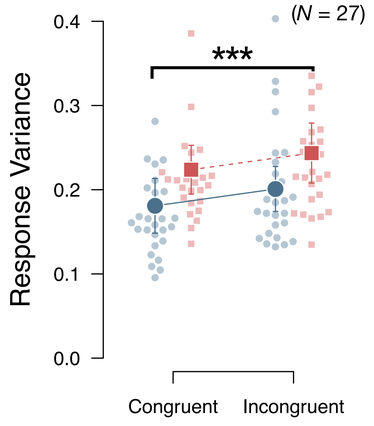


EXPERIMENT 2: Variance difference > mean size estimation

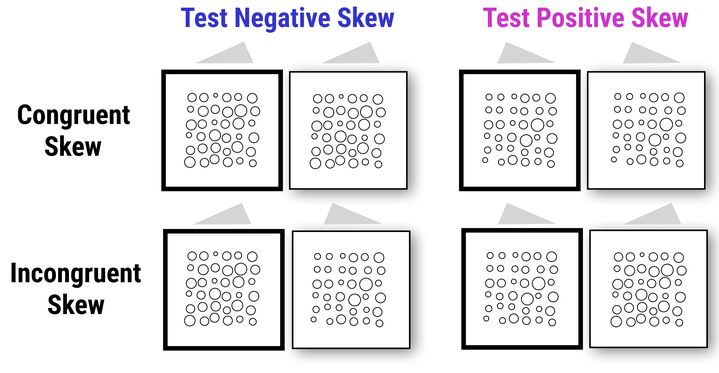


▶ For high variance test, using a probe with incongruent variance yielded significant bias, but using a probe with the same variance reduced bias. Incongruent variance increased response variance.

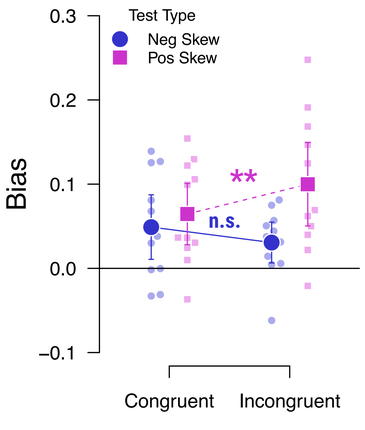


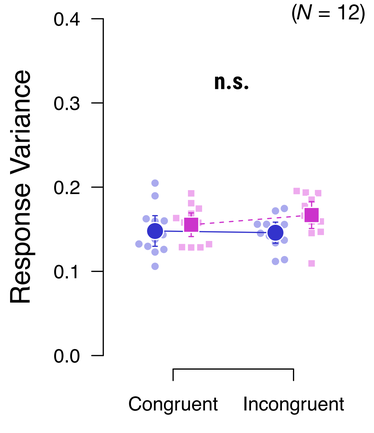


EXPERIMENT 3: Distribution shape difference > mean size estimation



▶ For positively skewed test, using a probe with incongruent skewness produced positive bias.





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