Probability Cuing Improves Perceptual Judgments

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Probability Cuing in Feature Space

Background:
- Spatial and endogenous attentional cues are:
  - probability cuing
  - lead to faster and better responses

Hypotheses:
- If the effectiveness of attentional cues are borne by the probability information they communicate, then,
  - probability cuing will improve response speed and accuracy
  - probability cue effects will be feature and position specific,
  - probability cue learning will be fast and malleable

References:

Experimental Specifics

Experiment 1 ("Constant" n = 26):
- Equal probability L/R and all angles (aggregated)
- L tilt on L and R tilt on R (or vice versa) 4:1.
- Manual adjustment of "meter" using keyboard.
- Half participants used R hand other half L hand.
- Five blocks (150 trials each).

Experiment 2 (Hand Switch n = 21):
- Same as "Constant" except,
  - Four blocks 150 trials each
  - After Block 2 participants switched responding hand

Experiment 3 (Probability Switch n = 20):
- Same as "Constant" except,
  - Four blocks 150 trials each
  - After Block 2, high probability tilt directions switched sides.

To calculate how quickly the high probability advantage developed, we plotted the precision for each third of each block stage (50 trials per stage:150 trials per block:4 blocks per study). All studies showed advantages for high probability trials within the first 50 trials. The lower row shows the study where probability was switched. An advantage for the new high probability orientations, appears relatively quickly.