Additional Visualization

An Empirical Study on the Reliability of Perceiving Correlation Indices Using Scatterplots
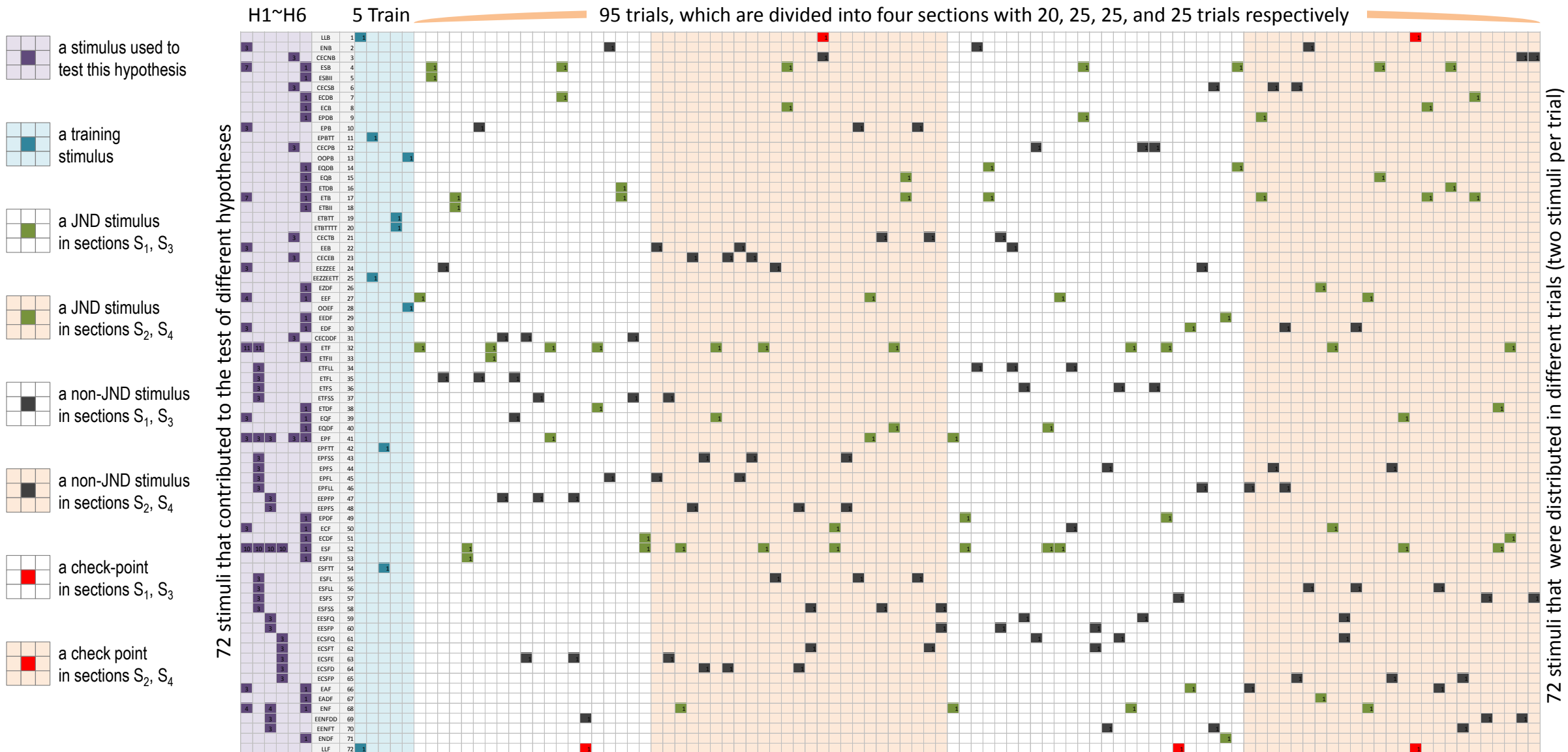
Varshita Sher[1], Karen G. Bemis[2], Ilaria Liccardi[3], and Min Chen[1]

[1] University of Oxford, UK,
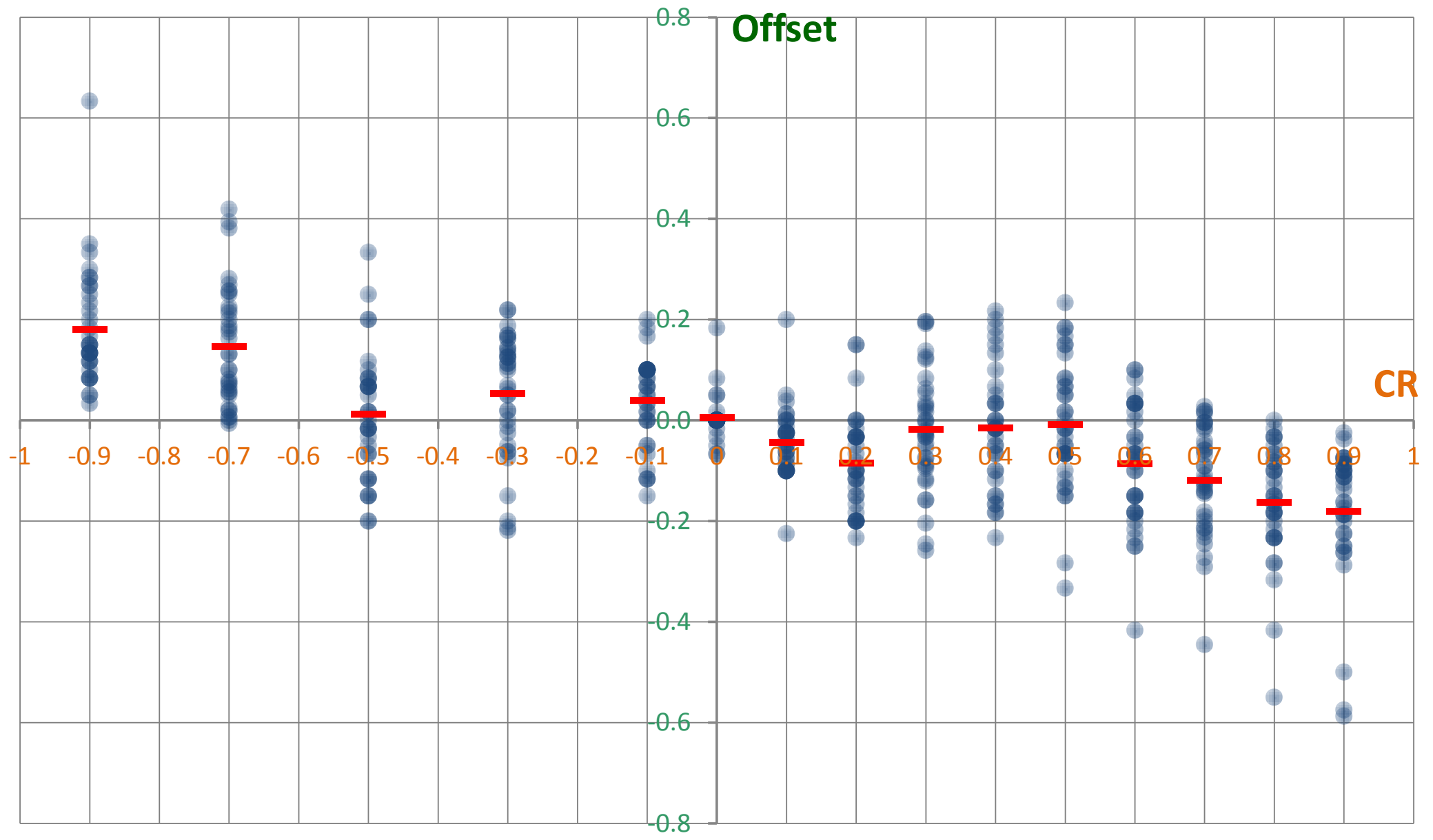[2] Rutgers, The State University of New Jersey, USA, and
[3] Massachusetts Institute of Technology, USA

A pixel-based visualization for Stimuli Distribution

The distribution of stimuli in relation to the six hypotheses (left) and the 5 training and 95 study trials.

Scatter Plot of 15x35 Offset Measures for H1

Offsets measured at CR=[-0.9, -0.7, -0.5, -0.3, -0.1, 0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9].
35 participants. Red bars indicated the mean for each CR value.

Four NND (No-Notifiable-Difference) Bands

- No-Notifiable-Difference (NND) is the percentage of JND trials where a participant failed to notice a difference. The higher the NND, the more failures.

- NND takes into account of participants' explicit answers indicating "no difference" as well as their incorrect answers (i.e., mistaking "less" as "more", and vice versa).

- We divided the 35 participants into four bands of mean NND:

  - 11 participants (mean NND: 8-17%)
  - 6 participants (mean NND: 21%)
  - 10 participants (mean NND: 25-29%)
  - 8 participants (mean NND: 33-67%)

- As shown in the Figure on the right, we can observe noticeable differences in NND values (from 0.11 to 0.75) at distance 0.1.

- This suggests that there might be variations among participants due to factors such as training.

PPMCC distance to the reference