**Maximum Deviation Analysis**

**SUMMARY – Rate (pos, neg) x Load (low, high) x Load Domain (emotion, neutral):**

There is a significant effect of rate, such that faces rated as negative had smaller maximum deviations than positive ratings.

There is a significant effect of load, such that maximum deviation is *smaller* for high load compared to low load. This does not match the previous analysis with only load as a predictor, which showed that maximum deviation is *larger* for high load compared to low load. We may want to discuss this a bit… but I’ve done a little bit of searching and it looks like this is a type of suppressor effect resulting from the inclusion of additional predictors.

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There is a significant rate x load interaction (figure below), such that under low loads (across both domains) positive ratings showed larger maximum deviations than negative ratings (p = .005; all p’s tukey adjusted). Further, positive ratings during high load had larger maximum deviations than negative ratings during low loads (p = .021). There is also a trend for negative ratings during low load to have smaller maximum deviations than negative ratings during high load (p = .056). This means that negative ratings during low load tend to have smaller maximum deviations (i.e., more direct trajectories) than other conditions.

There is a significant three-way interaction as well. Negative ratings during low, neutral load trials had smaller deviations than positive ratings during low (p = .027) and high (p = .005) emotional loads. Positive ratings under high load had smaller deviations for neutral compared to emotional load trials (p = .045). Negative ratings during low, emotional trials had smaller deviations than positive ratings during high, emotional loads. There were also two trends: (1) on trials with low, neutral loads positive ratings showed a trend towards larger deviations than negative ratings (p = .098) and (2) on trials with low, emotional trials positive ratings showed a trend towards larger deviations than negative ratings (p = .094).

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![A screenshot of a cell phone

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The Rate x Load interaction is similar to Mattek et al.’s (2016) findings. In that work, attraction towards modal response was mitigated under high cognitive load – here, we show that initial negativity is mitigated under high load. In other words, “negative” response trajectories are more direct under low load, but this is mitigated under high load.

The three-way interaction is more similar to the HLSF paper, which showed greater draw towards the competing response during trials rated as positive and that this was more extreme during HSF image presentations. Here, we show that positive interpretations during emotional working memory load (both low and high load) show greater response competition compared to negative interpretations during low, neutral working memory load (low, neutral is most similar to baseline valence bias) and low, emotional working memory load. This suggests that even when participants interpreted ambiguity as positive during emotional loads, there was a strong draw towards the negative response option, and this response competition is even greater than what is seen in high, neutral loads when surprise is rated as positive.