# Analysis write up

## Physical size stroop comparison

1. **Congruency Effect**:
   * Both Malaysian and UK participants show a clear **congruency effect**, with faster response times for **congruent** (matching size and number) trials than for **incongruent** (non-matching) trials. However, the **magnitude of the congruency effect** appears more pronounced in the Malaysian data, particularly at higher numerical distances. This suggests that Malaysian participants may experience greater interference from incongruent trials, potentially indicating stronger automatic processing effects when faced with conflicting size and number information.
2. **Numerical Distance Effect**:
   * For both cultures, there is an increase in response time as the **numerical distance increases**, especially for **incongruent** trials. However, the increase in response time with larger numerical distances is slightly steeper in Malaysia than in the UK. This difference could suggest that Malaysian participants rely more on automatic numerical comparison, which leads to greater interference when the physical size contradicts the numerical value, especially for numbers that are far apart.
3. **Fluency Level Impact**:
   * The **impact of multiplication fluency** on response times appears similar across both cultures, with little differentiation in response time based on fluency levels. This suggests that fluency in multiplication skills does not significantly mitigate the automatic processing interference (from incongruent trials) in either culture, implying that the task taps into fundamental automatic processing that is less influenced by learned arithmetic fluency.
4. **Cultural Differences in Automatic Processing**:
   * Overall, Malaysian participants exhibit a stronger sensitivity to incongruency, particularly with larger numerical distances, which may point to cultural or educational differences in **automatic processing and attentional control**. In Malaysia, where rote memorization of arithmetic facts is more culturally emphasized, this might strengthen automatic associations with numerical values, making incongruent trials more disruptive.

In summary, **Malaysian participants exhibit a stronger interference effect from incongruency, especially at higher numerical distances**, compared to their UK counterparts. This suggests that cultural differences, potentially shaped by educational practices or cognitive strategies in dealing with numbers, may influence the automatic processing of numerical information, with Malaysians potentially experiencing stronger automatic associations that heighten interference in the incongruent condition.