

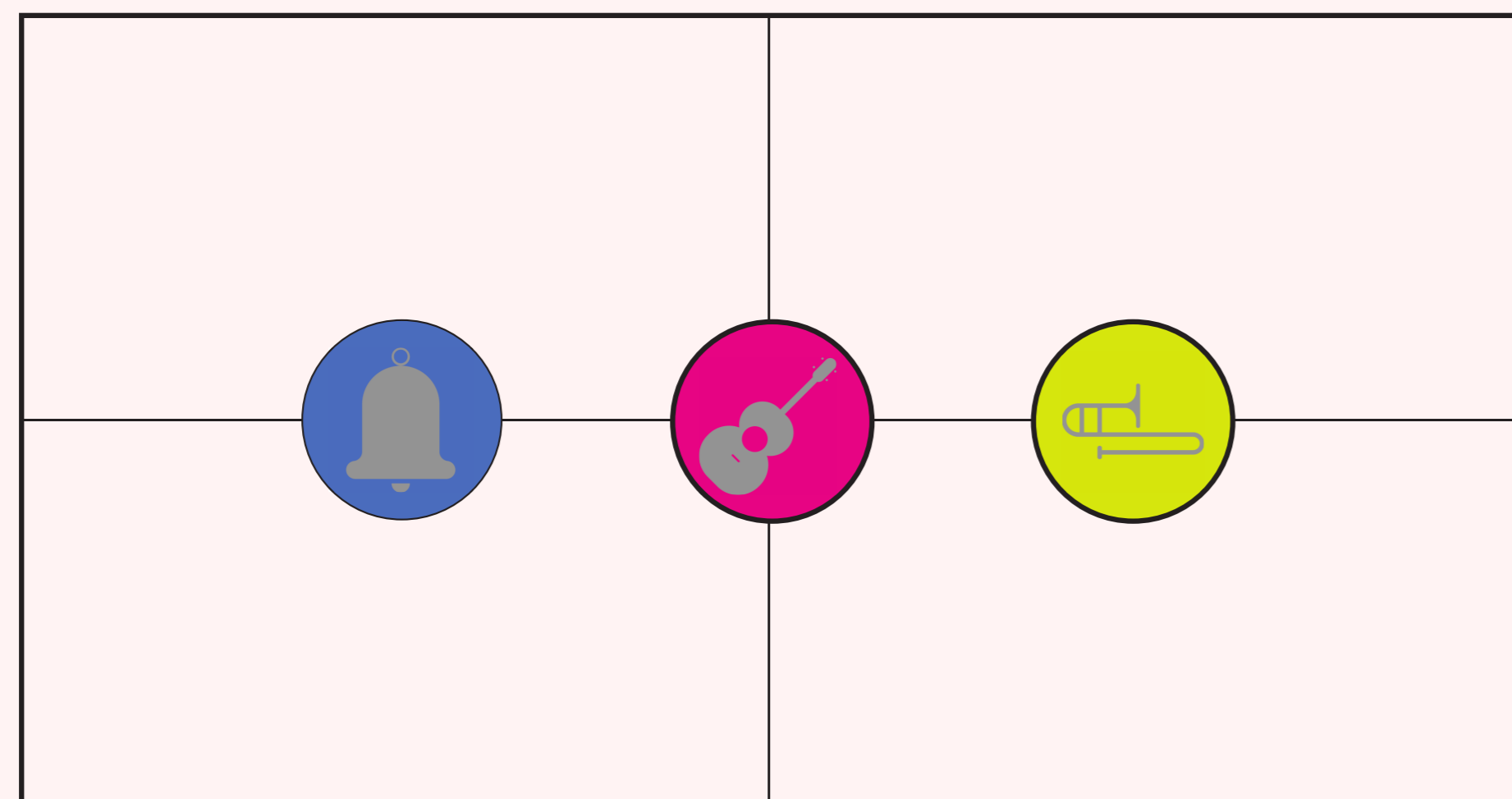
Comparing Stage Metaphor Interfaces as a Controller for Stereo Position and Level

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1 Configurations

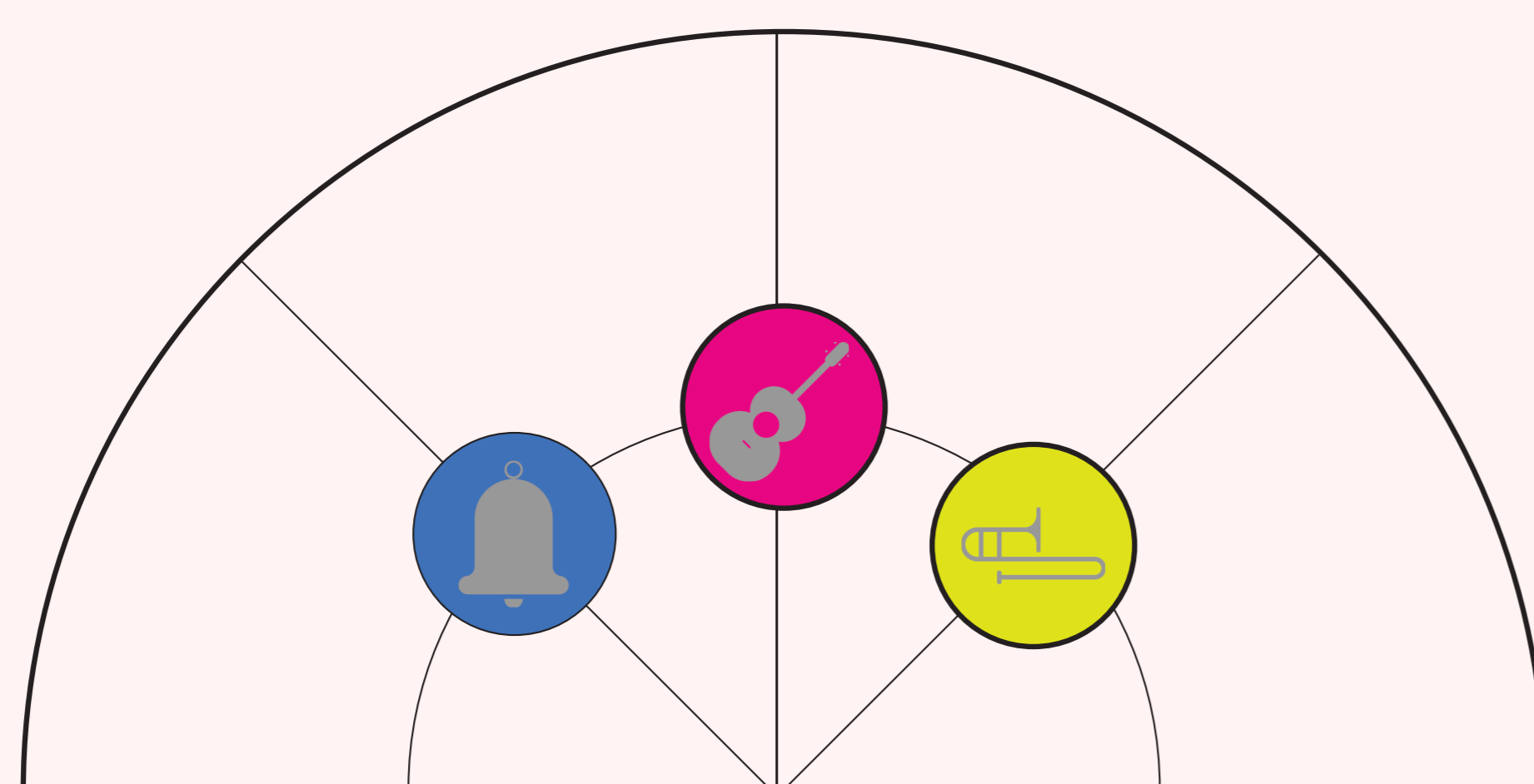
- ‘Stage metaphor’ is a popular alternative to faders and potentiometers to control level and panning [1]



Rectangular

- + Easy mapping to X (pan) and Y (level) coordinates
- Poor correspondence with psychoacoustics (distance and angle)

$$s = \frac{(v - v_{min}) * (s_{max} - s_{min})}{v_{max} - v_{min}} + s_{min}$$

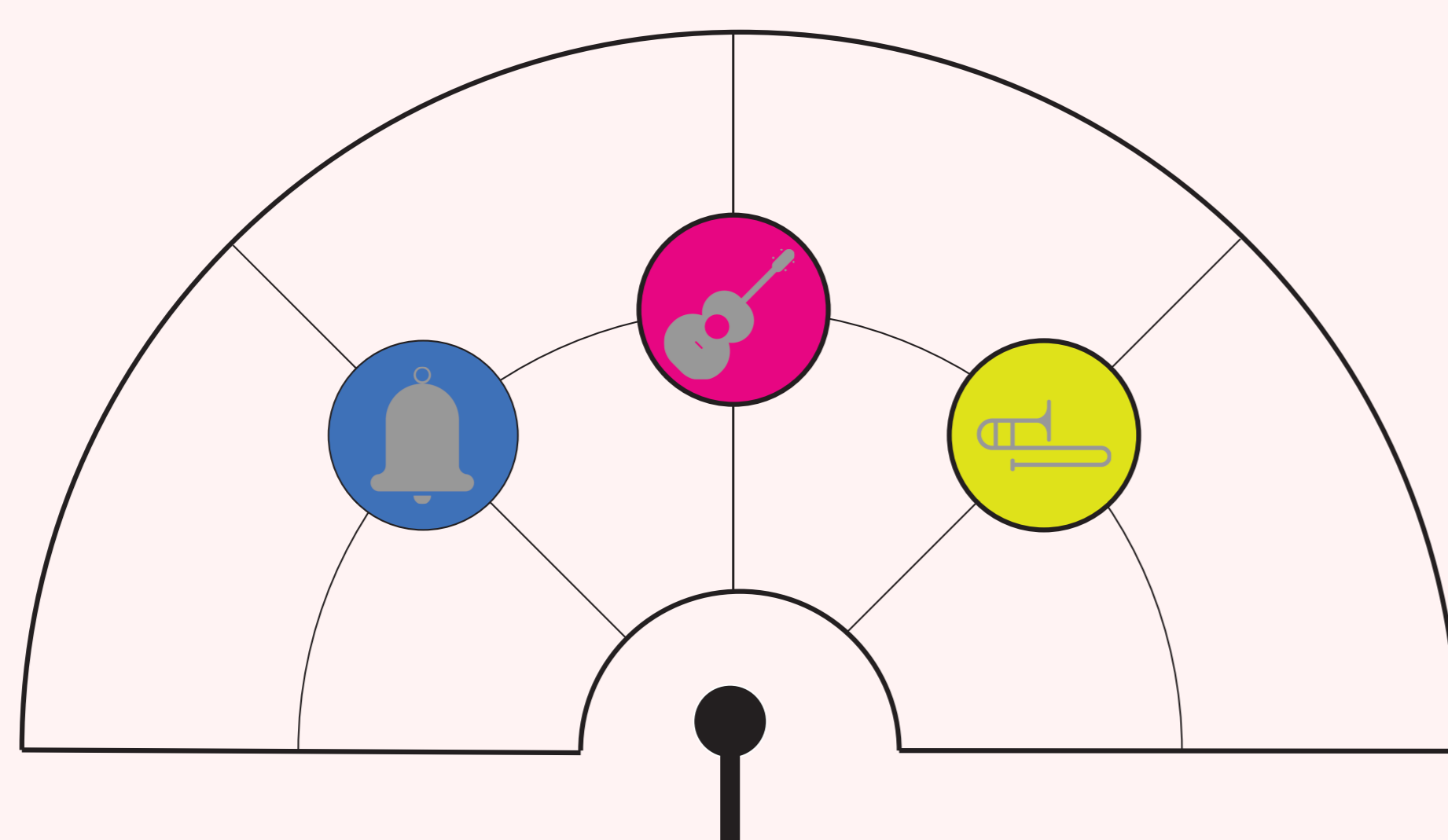


Polar

- + Perceptually representative
- At high levels (close by), area available for panning too small

$$p_s = \sqrt{g_v^2 + p_v^2} \quad g_v = g_s \cdot \cos(p_s)$$

$$g_s = \tan^{-1}\left(\frac{p_v}{g_v}\right) \quad p_v = g_s \cdot \sin(p_s)$$



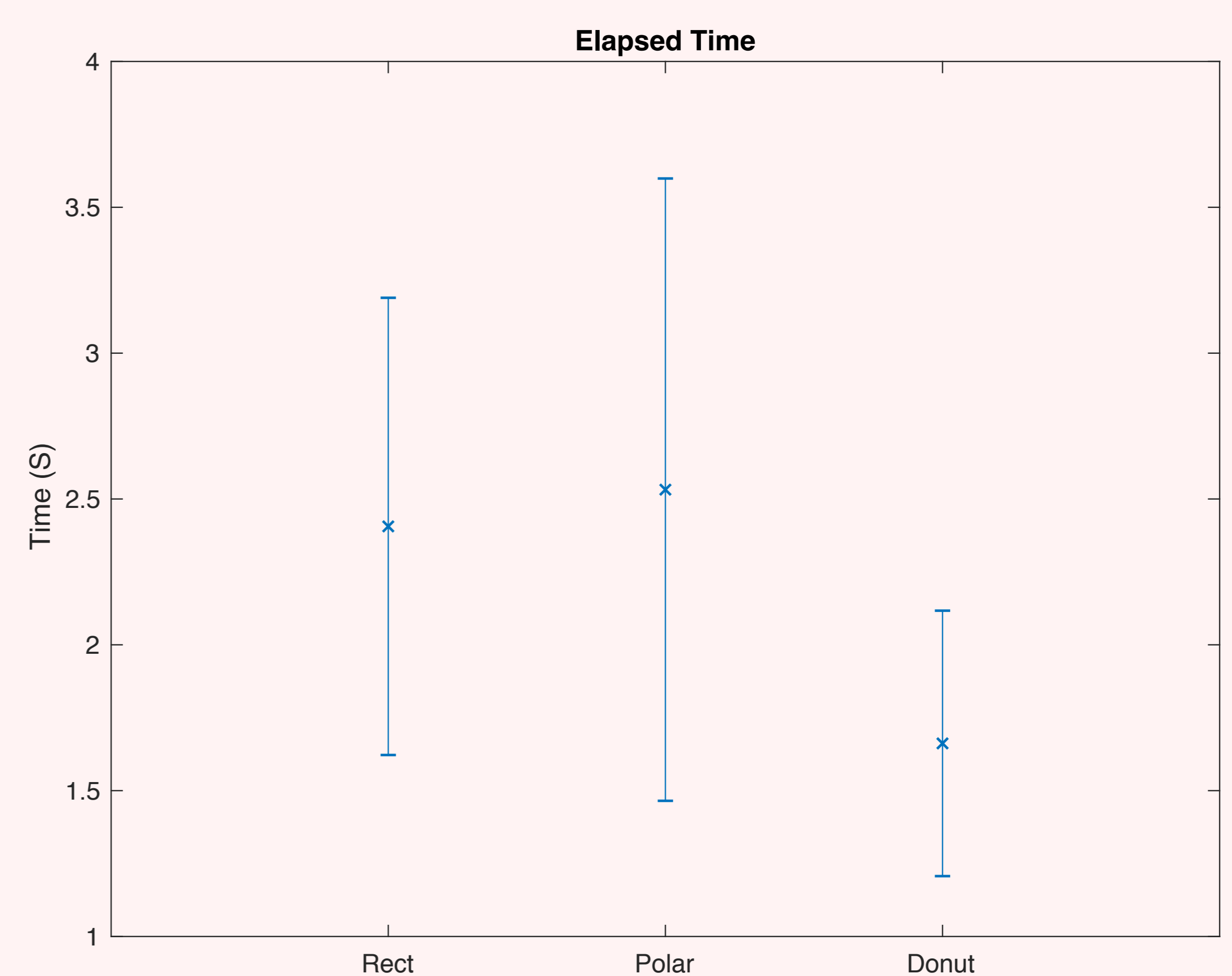
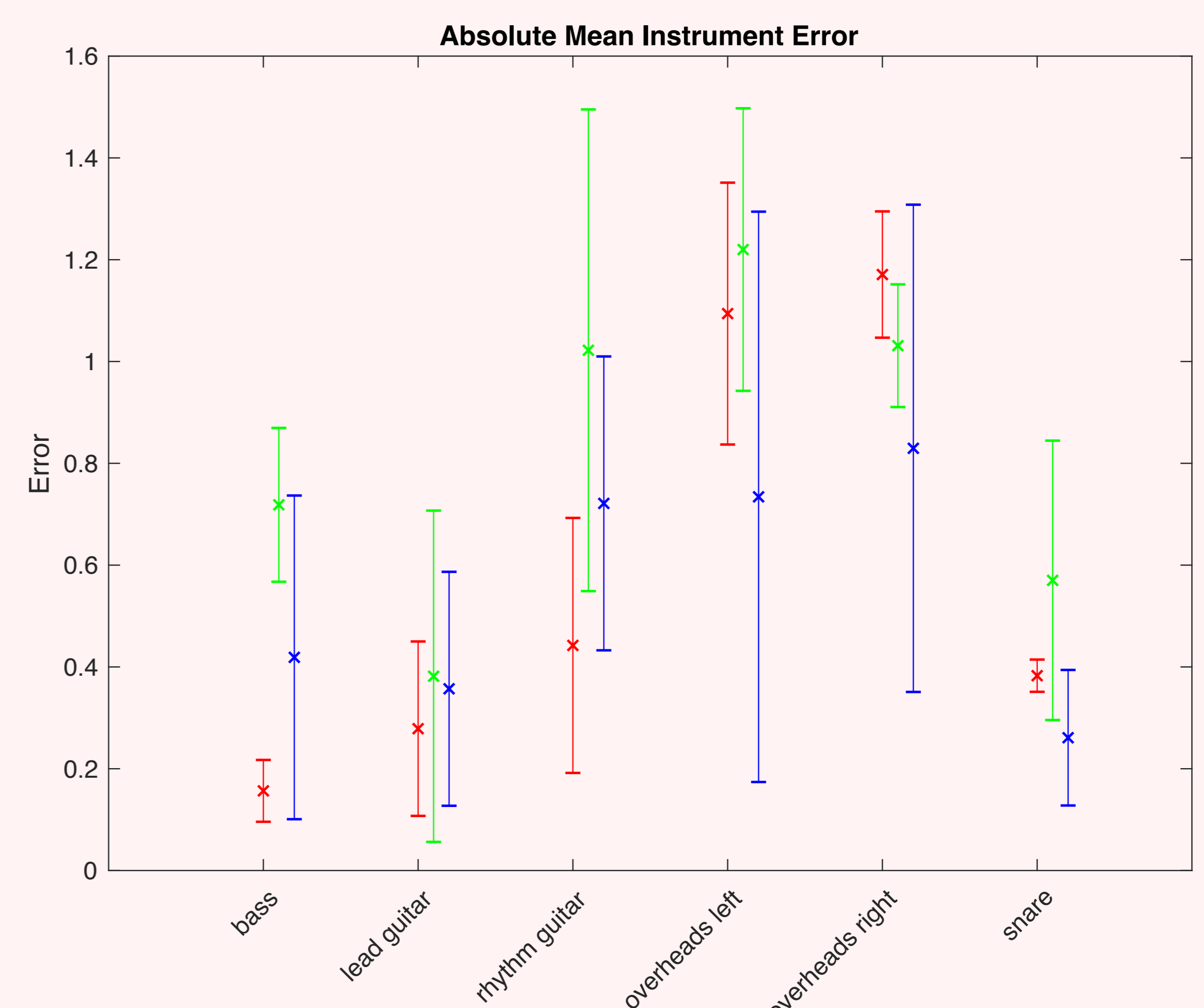
Half-doughnut

Still a 180° arc available for panning at maximum level

2 Methodology

- Target mix matching task, as in [2]
- Six stems (lead guitar, rhythm guitar, bass guitar, snare drum, and overheads left and right)
- Assessment of accuracy and duration, and informal discussion
- Each subject tries all three configurations

3 Results



- Half-doughnut configuration tends to higher accuracy and faster results
- One subject expressed preference for Rectangular configuration because of larger on-screen real-estate
- Two subjects noted difficulty with Polar configuration due to restricted panning at high levels