

SNARC Effect: Approximate Number System and Spatial Representation

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Abstract (poster)

Relation between numerosity and space is a well known phenomenon that has attracted the interest of many researchers in numerical cognition. SNARC effect, or Spatial Numerical Association of Response Codes, suggest that perception of numbers elicits spatial codes that are associated with the magnitude of the number. It consists on small and large numbers facilitating left/right responses respectively. This effect has been shown during parity judgment number task and magnitude comparison task when numbers or word numbers were employed. Whether this interaction also affects numerosity processing causing lateralized responses in a left to right mental line remains unclear. *Here we asked which is the minimum temporal threshold ability to compare numerosities above the rank of subitizing and its interaction with spatial representation.* Twenty adults performed a magnitude comparison task of nonsymbolic stimuli where bimanual reactions to a central target were recorded. Two consecutive arrays of dots were presented and participants had to judge if the second array contained more or less dots than the first one. Quantities in each array ranged from 6 to 21 dots and ratios were set into 0.5, 0.6, 0.7 and 0.8. Stimuli presentation varied from 50 ms to 250 ms. Results indicate that numerosity is perceived in a mental number line for longer stimuli's presentation. However, when shorter durations are introduced response codes seem to influence subject's response only when difference between stimuli correspond to small ratios.

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