

## Does the dimensionality of the perceived size play a role in the SNARC-like effect for visual illusions?

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The Spatial-Numerical Association of Response Codes (SNARC) effect is considered evidence of the association between number magnitude and space, and consists of faster left key-press responses to small numbers and faster right key-press responses to large numbers [1]. Recent studies found that this association extends to non-numerical magnitudes, such as to luminance [2] and to the physical size of pictorial surfaces [3]. Sarcetta, Prpic, Murgia, Galmonte & Agostini (2015) [4] investigated whether this effect extends to phenomenal size of two-dimensional figures. Authors found a SNARC-like effect associated to the physical size of the inducers used in the Delboeuf size-contrast configuration (i.e., closed rings) and the Kaniza's triangle (i.e., pacmans). No SNARC-like effect was instead observed for the phenomenal size of the two-dimensional figures (i.e., filled circle and illusory triangle). The present study further extends this line of research aiming at investigating if a SNARC-like effect occurs for the phenomenal size of one-dimensional (rather than two dimensional) figures. The Muller-Lyer and the Ponzo illusions were considered. For the "Muller-Lyer" experiment, participants were required to compare two equally long, but perceptually different lines presented simultaneously to the left and right side of the screen. In the first session participants had to press the left key when the (apparently) longer line appeared on the left side of the screen and the right key when it appeared on the right. In the second session participants had to detect the line that appeared shorter rather than longer. For the "Ponzo" experiment, participants were required to compare two equally long lines simultaneously presented to the left and right side of the screen, that were displayed within the Ponzo's inducers. The procedure and the response assignments were the same as in the Muller-Lyer experiment. Results suggest that the phenomenal size experienced in both geometrical size illusions did not elicit a SNARC-like effect. Similarly, no evidence was found that the physical dimensions of the inducers elicit a SNARC-like effect in neither the Muller-Lyer nor the Ponzo configuration. This result, taken together with the result of Sarcetta et al. (2015), suggests that a SNARC-like effect can be elicited only by the physical size of pictorial surfaces and not by the phenomenal size of neither two-dimensional nor one-dimensional figures.

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