

ZMATH 2012d.00156

Gevers, Wim; Santens, Seppe; Dhooge, Elisah; Chen, Qi; Van den Bossche, Lisa; Fias, Wim; Verguts, Tom

Verbal-spatial and visuospatial coding of number-space interactions.

J. Exp. Psychol.: Gen. 139, No. 1, 180-190 (2010).

Summary: A tight correspondence has been postulated between the representations of number and space. The spatial numerical association of response codes (SNARC) effect, which reflects the observation that people respond faster with the left-hand side to small numbers and with the right-hand side to large numbers, is regarded as strong evidence for this correspondence. The dominant explanation of the SNARC effect is that it results from visuospatial coding of magnitude (e.g., the mental number line hypothesis). In a series of experiments, we demonstrated that this is only part of the story and that verbal-spatial coding influences processes and representations that have been believed to be purely visuospatial. Additionally, when both accounts were directly contrasted, verbal-spatial coding was observed in absence of visuospatial coding. Relations to other number-space interactions and implications for other tasks are discussed.

Classification: C30 C80

Keywords: cognitive science; cognitive psychology; experimental psychology; research; SNARC effect; numerical cognition; association; magnitude; task; attention; line, unilateral neglect; representational space; picture-word interference; stimulus-response compatibility; mental number line; spatio-numerical interactions; neuropsychological tests; orientation; functional laterality; reaction time; space perception; visual perception; photic stimulation; young adult

doi:10.1037/a0017688