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Temporal order judgment reveals how number magnitude affects visuospatial attention.

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Summary: The existence of spatial components in the mental representation of number magnitude has raised the question regarding the relation between numbers and spatial attention. We present six experiments in which this relation was examined using a temporal order judgment task to index attentional allocation. Results demonstrate that one important consequence of numerical processing is the automatic allocation of spatial attention, which in turn affects the perception of the temporal order of visual events. Given equal onset time, left-side stimuli are perceived to occur before right-side stimuli when a small number (1, 2) is processed, whereas right-side stimuli are perceived to occur before left-side stimuli when a larger number (8, 9) is processed. In addition, we show that this attentional effect is specific to quantity processing and does not generalize to non-numerical ordinal sequences.

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