

**Semantic numerical representation in blind subjects:
The role of vision in the spatial format of the mental number line.**

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ABSTRACT

Does vision play a role in the elaboration of the semantic representation of small and large numerosities, notably in its spatial format? To investigate this issue, we decided to compare in the auditory modality the performance of congenitally and early blind people with that of a sighted control group, in two number comparison tasks (to 5 and to 55) and in one parity judgment task. Blind and sighted participants presented exactly the same distance and SNARC effects, indicating that they share the same semantic numerical representation. In consequence, our results suggest that the spatial dimension of the numerical representation is not necessarily attributable to the visual modality and that the absence of vision does not preclude the elaboration of this representation for 1-digit (Experiment 1) and for 2-digit numbers (Experiment 2). Moreover, as classical semantic numerical effects were observed in the auditory modality, the postulate of the amodal nature of the mental number line for both small and large magnitudes was reinforced.