

Timing in peripersonal space beyond internal clock model

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Abstract: Peripersonal space refers to the implicit representation of space surrounding body parts, reflecting the physiological specificity of the body and the pragmatic relevance of nearby object perception for action. Studies on peripersonal space often employ the duration bisection task to investigate spatiotemporal interactions. However, the findings of these studies are inconsistent, and their interpretations remain incoherent. To address this issue, I philosophically examine theoretical frameworks underlying both the experimental designs and the interpretation of results. Particularly, I argue that the internal clock model fails to capture the action-guiding role of peripersonal space, and I outline an alternative approach. First, by conceptualising timing as a pure cognitive process, the internal clock model overlooks the temporality of motor processing, which influences both the structure of peripersonal space and the design of duration reproduction task. Second, the plasticity of peripersonal space through tool integration cannot be explained by the two core concepts of the model, namely, attention and the accumulation of paces. In light of this diagnosis, I sketch an alternative framework in which estimated duration is conceived as time for action execution, rather than as the amounts of accumulated paces.

References:

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