

The Impact of Anchor Objects on Scene Affordance Understanding

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Every day, we constantly interact with the objects around us. Studies suggest a high importance of anchor objects during visual search and scene understanding (Võ, 2021), but the impact of anchor objects on the perceived functionality of a scene remains unexplored. In the current study, we investigated the influence of different action related and unrelated anchors on the understanding of scene affordances, i.e., the action possibilities in a scene. We investigated this by presenting an indoor scene in which either an action-related anchor object (a stove and the action cooking), an action-unrelated anchor (a fridge and the action cooking) or a random object was masked. Participants then performed a lexical decision task of non-words vs. action-words, the latter being either consistent with the scene (a kitchen and the action cooking) or inconsistent (a bathroom and the action cooking). Reaction times were faster when words were semantically consistent than when they were inconsistent. Within the semantically consistent condition, participants' reaction times were fastest when random objects were masked and significantly slower when anchors were masked, regardless of whether they were related to the presented action or not. The findings suggest that the presence of anchors in a scene impacts the perception of a scene's affordance to such a degree that it modulates lexical access to action words. We conclude that anchor objects do not only hold predictions about the presence of other objects but also shape the way we perceive and understand action potentials in scenes.

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