



Thinking with portals

Revisiting kinematic cues to intention



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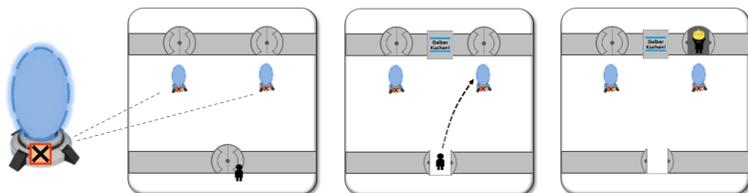
What we intend to achieve with our actions affects the way we move our body. This has been repeatedly shown for both, movement-related intentions such as turning an object (Herbort et al., 2012), and for relatively high-level intentions such as the intention to collaborate or to compete with a social partner (Georgiou et al., 2007).

The impact of an intermediate level of intentions is far less clear. With intermediate we refer to action-contingent changes in the physical environment, i.e., **action effects**. The present experiment scrutinizes this level of analysis by showing how such anticipated effects influence **movement trajectories**.

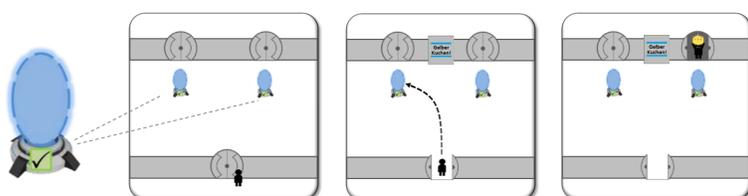
Participants operated the **computer mouse** to steer a virtual avatar toward portals that would displace the avatar to a different but predictable location.

Task: Get cake (red vs. yellow)! Yellow cake is always behind the right door, red cake is always behind the left door. Portals can be switched on or off.

Portals off (compatible response-effect mapping):



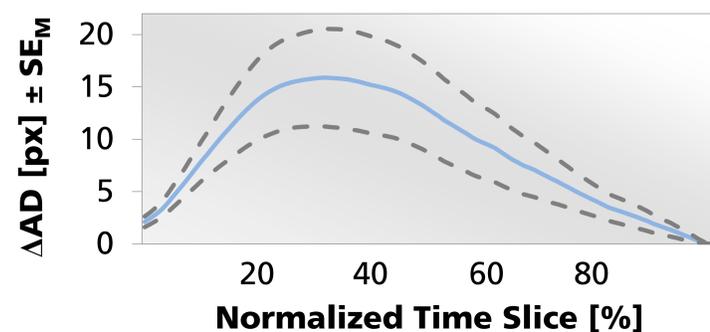
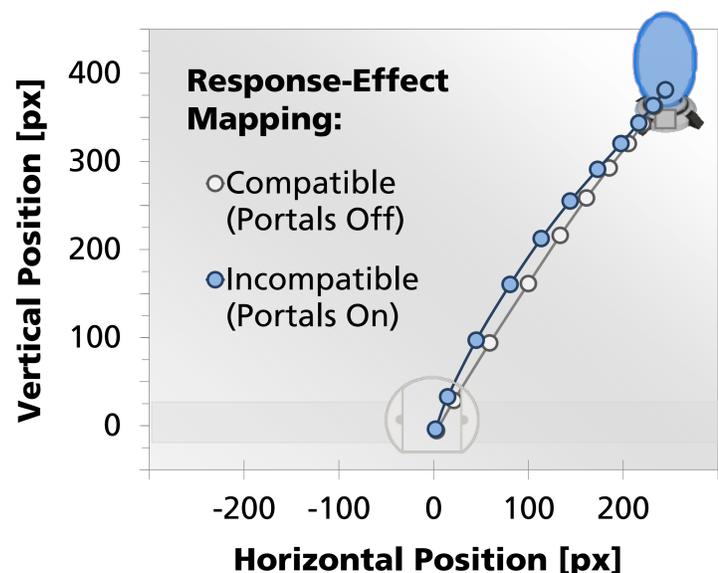
Portals on (incompatible response-effect mapping):



Portal preview

Movement to target

Action effect



AD = Absolute Distance between trajectory and straight line from start to endpoint.

Anticipated action consequences indeed leave a fingerprint on movement trajectories. These findings provide an opportunity to unite previous accounts on the relation of intentions and movements with general frameworks of **effect-based action control**.

Full story: Pfister, R., Janczyk, M., Wirth, R., Dignath, D., & Kunde, W. (2014). Thinking with portals: Revisiting kinematic cues to intention. *Cognition*, 133(2), 464-473.