The Role of Familiarity in Segmentation of Human Action

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Abstract: Adults process others' actions with apparent ease, despite the complexity involved. Expertise seems key, yet little is known about how expertise alters action processing. Perhaps expertise reshapes how attention is allocated as actions unfold. We investigated this possibility using Hard, Recchia, & Tversky's (2011) "dwell-time paradigm:" viewers advance through slideshows extracted from a digitized video of an activity sequence, typically displaying a "boundary advantage" (longer dwelling at segment boundaries than mid-segment action) that predicts memory. Participants in our study advanced through slideshows varying in familiarity of action depicted (high, moderate, low) but equated on other dimensions. Systematic dwell-time differences emerged in relation to familiarity: a stronger boundary advantage arose when action was moderately familiar relative to either highly familiar or unfamiliar, pointing to specific expertise-driven changes in how attention is allocated as action unfolds. A theoretical account of these changes offers new insight into fundamental processes subserving fluent action processing.