

Multiple object tracking explained with neither fixed nor flexible resources

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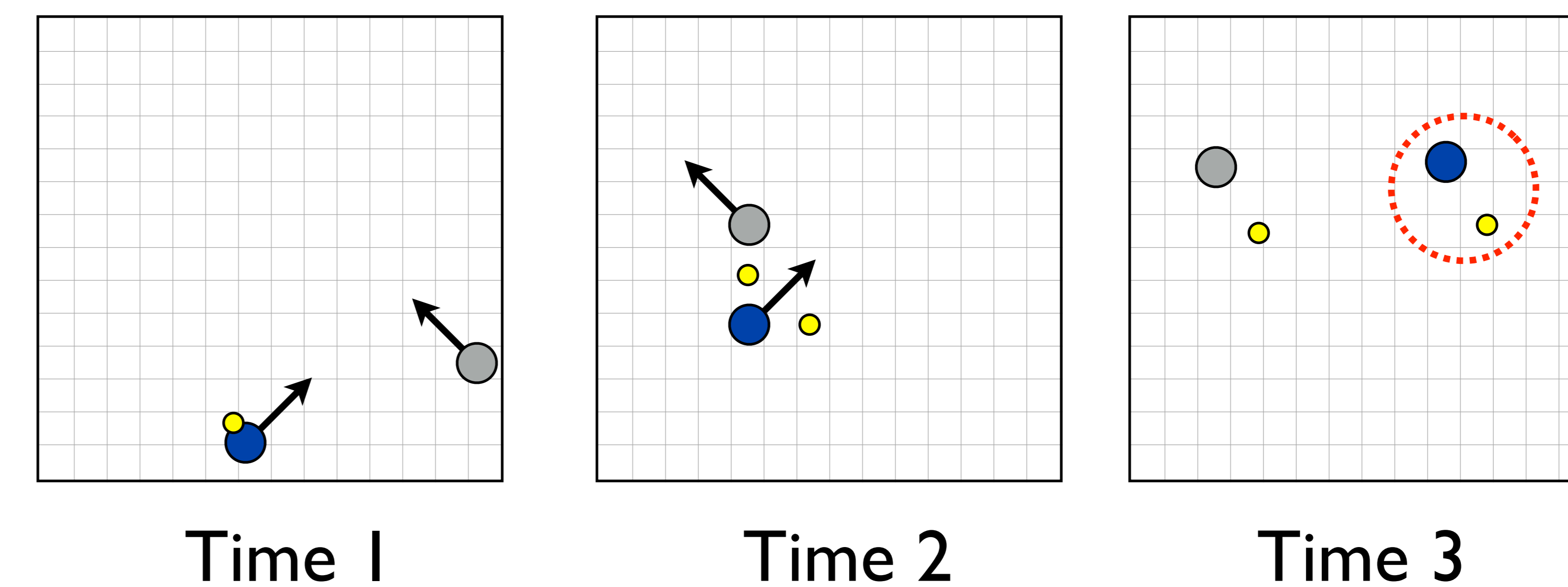
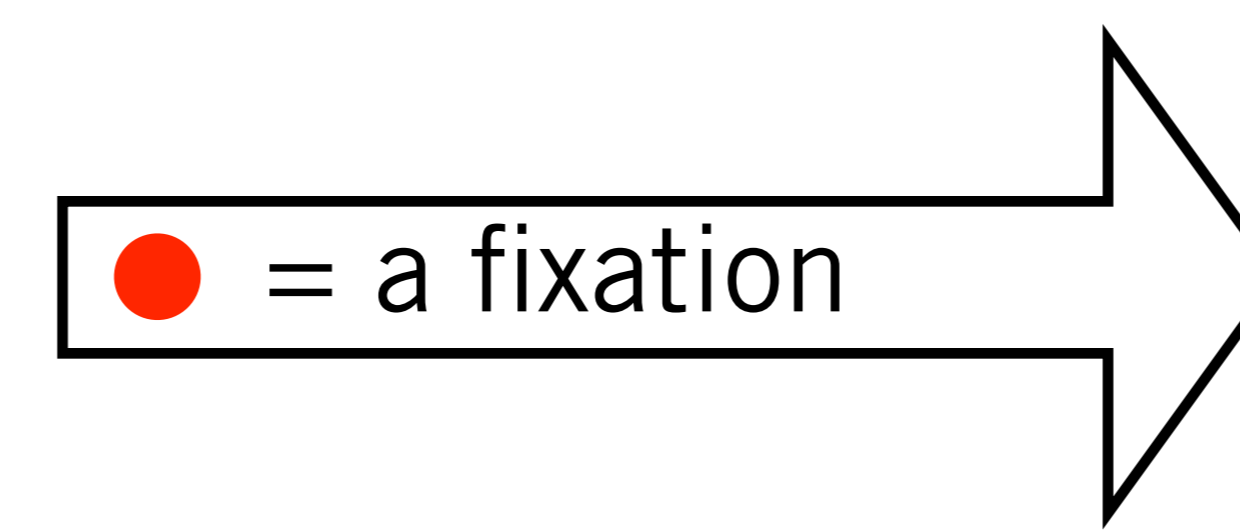
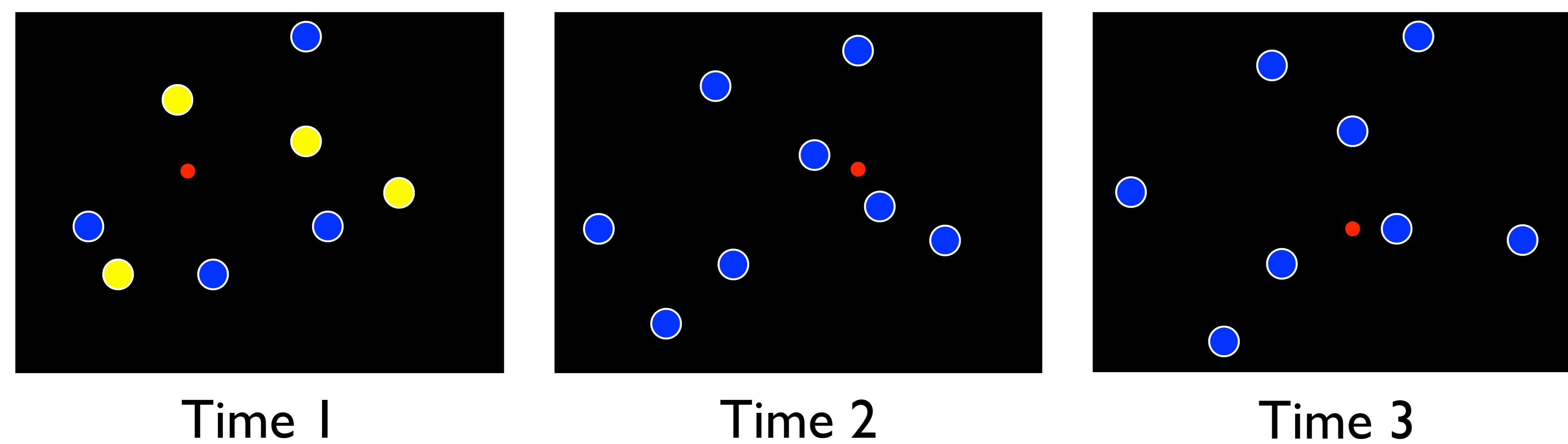
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Goal: Explain MOT performance, **both general limits and individual differences.**

Minimalist approach: A simple, probabilistic model that adopts the fixations of individual human observers.

Step 1: Participants tracked 3-8 targets, 4 speeds, w/eye gaze monitored

Step 2: A Kalman Filter Model with limited **temporal resolution** and **eccentricity dependent spatial resolution**. Model adopts collected fixations.



● a tracked target
● an untracked nontarget
● unlabeled samples
For more information of the model, please see: Zhong S., Ma, Z., Wilson, C., Liu, Y., & Flombaum, J. (2014). JoV.

MOT limits are effective, not inherent, arising because of noisy, fixation-dependent signals. No capacity or resource limits necessary.

Result 1: The model captures load and speed effects.

Result 2: The model captures individual differences: Simulated participants rank as do actual participants.

