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### fMTP

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# fMTP: A Unifying Computational Framework of Temporal Preparation Across Time Scales

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## The Story

Temporal preparation is modulated across a **vast range of time scales**

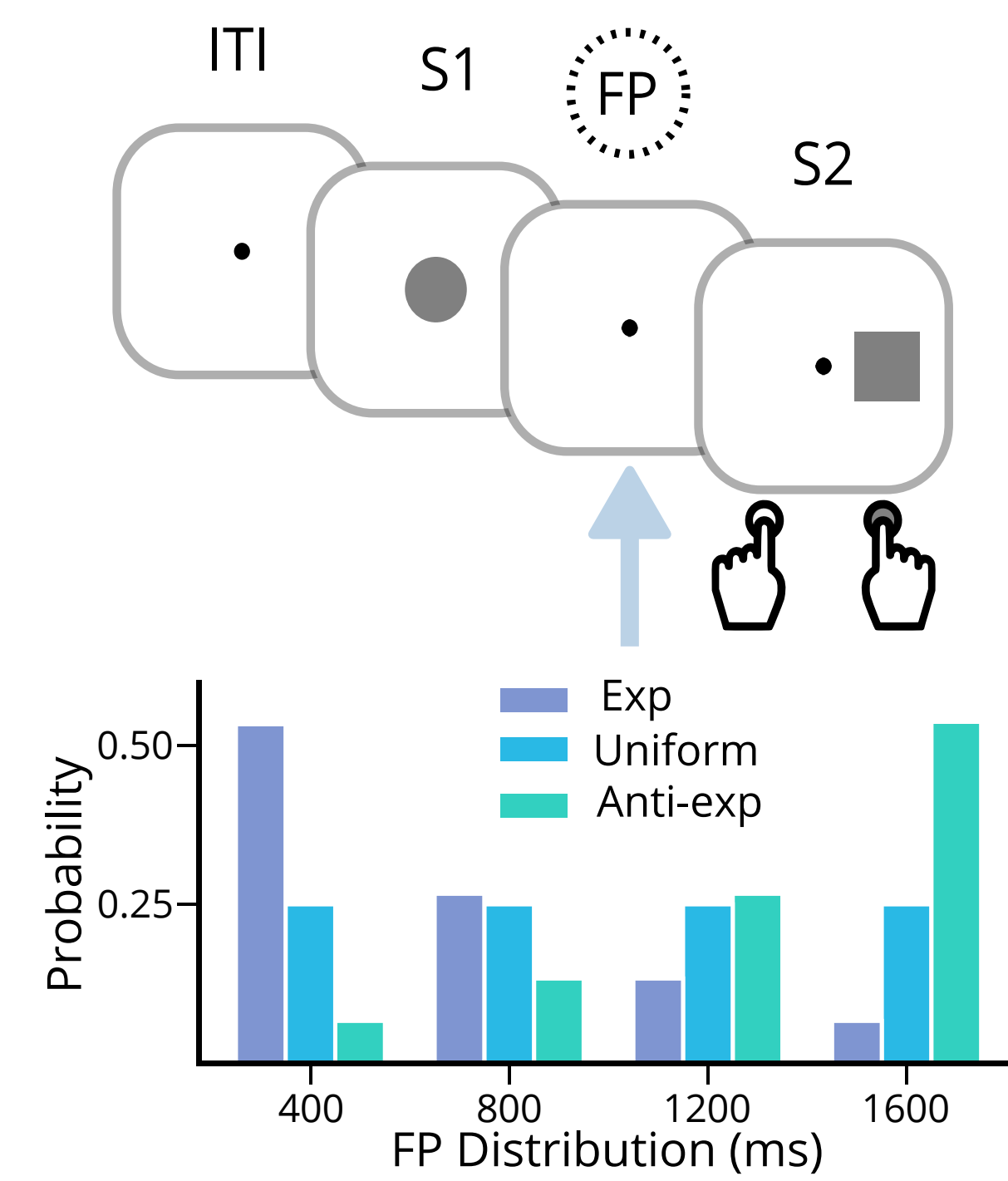
What is the unifying mechanism giving rise to these phenomena?

We pursue the view that these phenomena are driven by **implicitly learned processes**

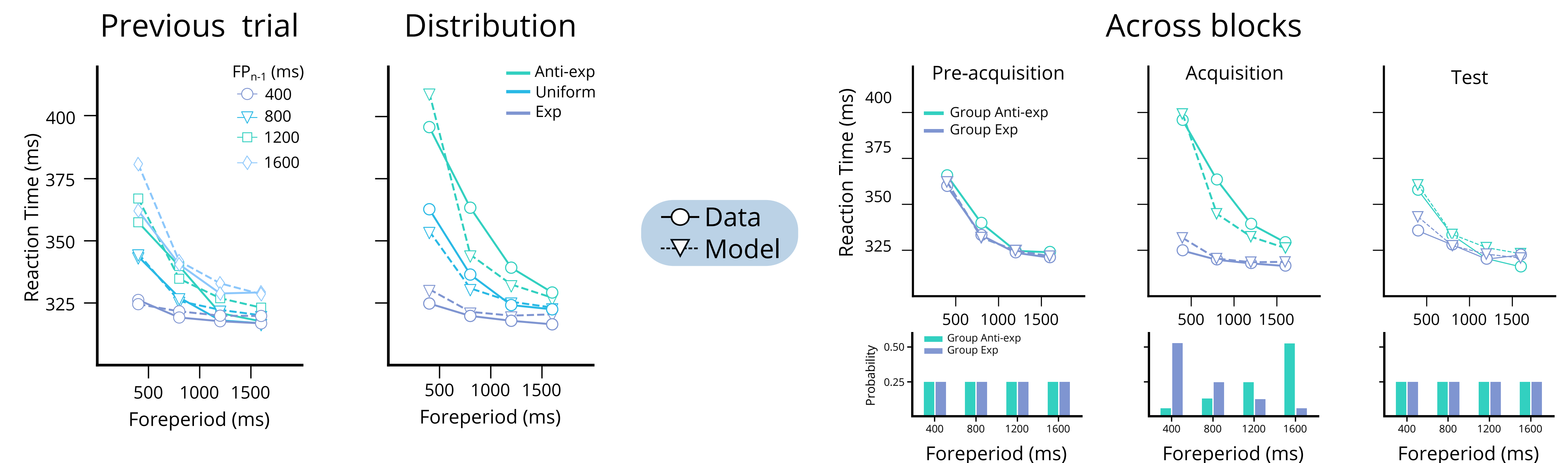
fMTP integrates insights on the **coding of time, episodic memory, and motor planning**

Simulations demonstrate that **fMTP captures all phenomena**

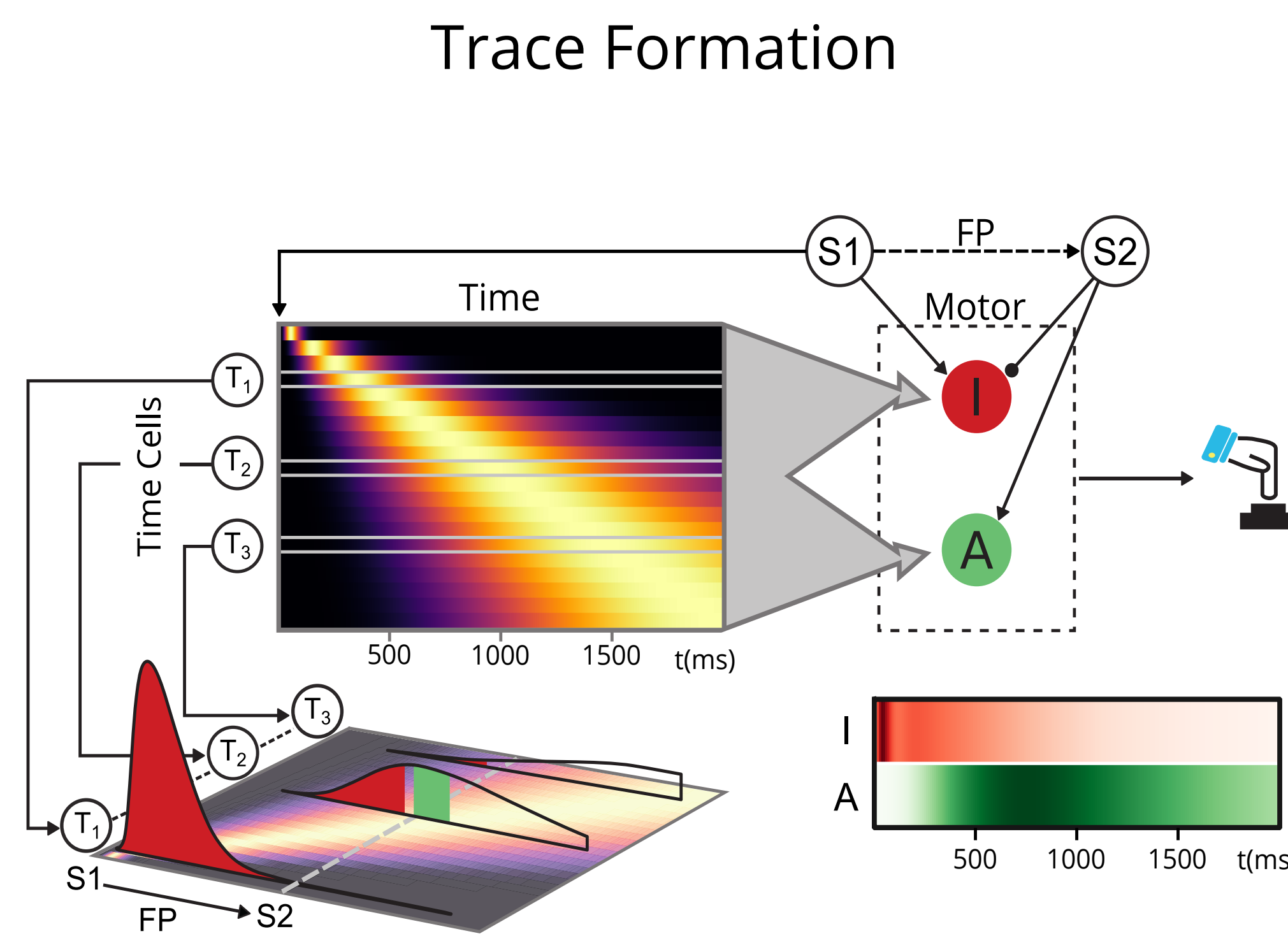
## FP Paradigm



## FP Effects

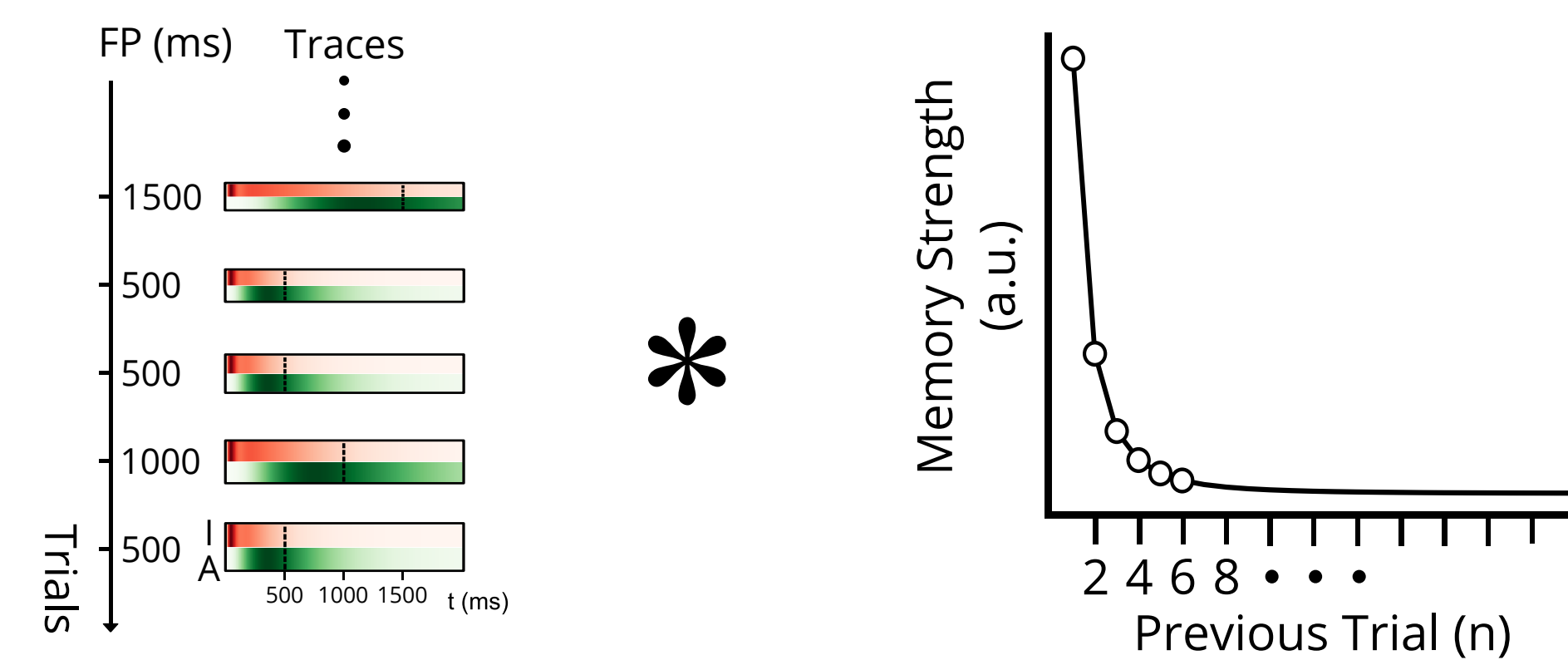


## fMTP's Dynamics



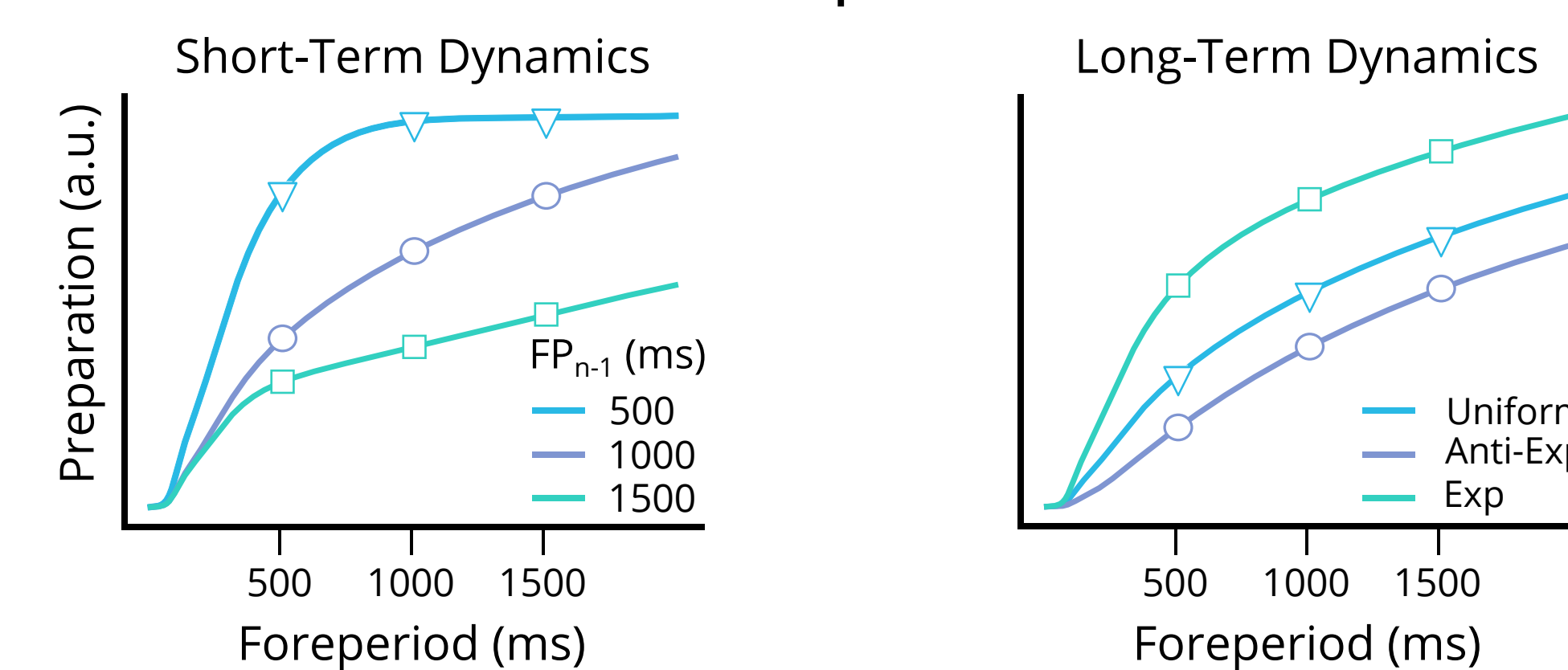
The core of fMTP is an implicit associative learning process between time cells and activation- and inhibition motor units

## Trace Retrieval



Previous experiences drive preparation according to their recency

## Trace Expression



Strong influence of recent trials gives rise to short-term dynamics

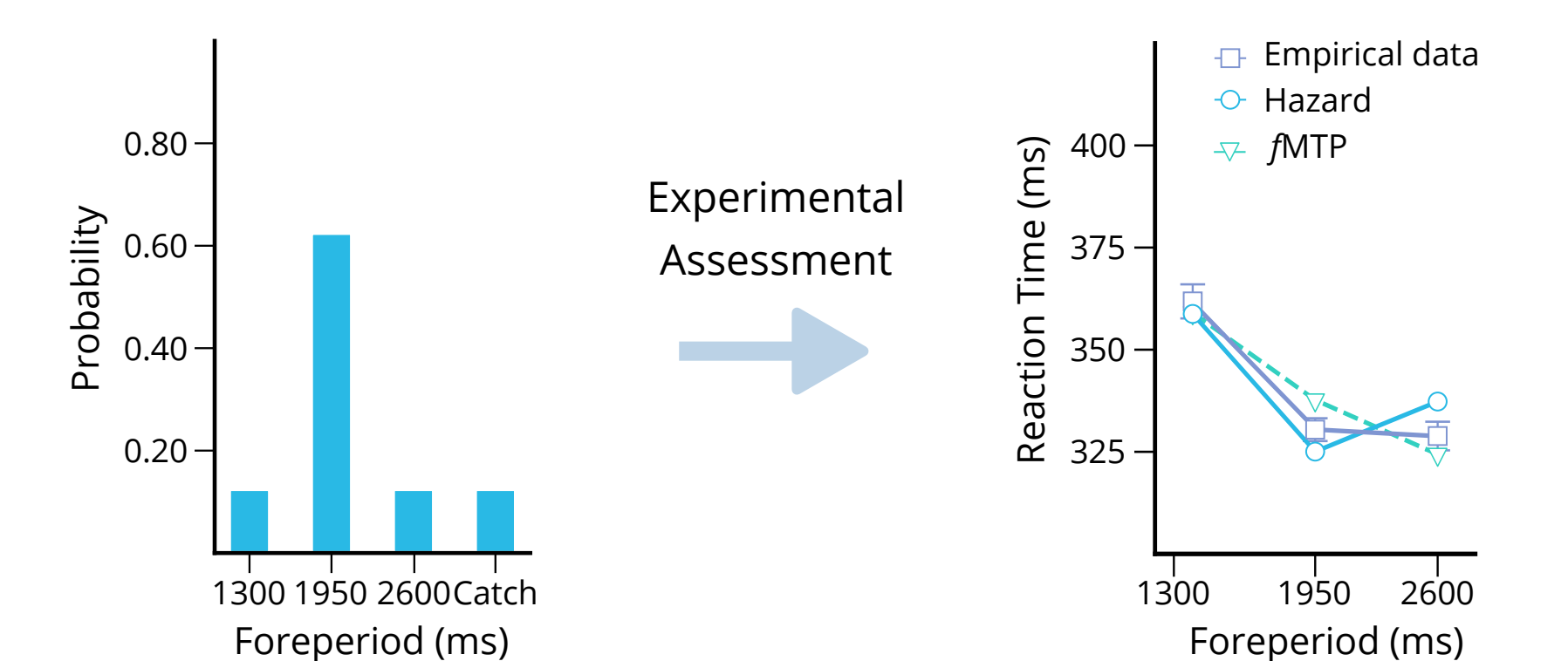
Long-lasting influence of each trial gives rise to long-term dynamics

## fMTP vs Hazard

Hazard accounts: Preparation is controlled by a process that follows the conditional probability

	Previous trial	Distribution	Across Blocks
fMTP	✓	✓	✓
Hazard Function	✗	?	✗

fMTP and the Hazard function make different predictions regarding the Gaussian FP distribution



We show the data to be consistent with fMTP and to deviate from the Hazard function