



CNeuro2022 Lecture Abstracts

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Abstract 1 – Basic Lecture:

Intertemporal Conflicts in Decision Making: Present vs. Future and Present vs. Past

Much misery is the outcome of behaviors that seem self-defeating: we are vulnerable to addictions, we eat to excess, watch too much television, do not exercise, and procrastinate; some of us spend too easily, others have trouble spending, hoarding money and other possessions. Worst of all, we behave this way despite knowing that these behaviors are self-defeating. I will use a normative theory of choice to explain the seemingly counterproductive but stable behavior patterns, as self-consistent choices in intertemporal conflicts. Specifically, I will talk about two conflicts: a conflict with the future, which emerges when the temporal-discounting function is non-exponential, and a conflict with the past, which emerges in partially-observable Markov decision processes.

Abstract 2 – Advanced Lecture:

Choice bias as a window to the microscopic dynamics of choice

Idiosyncratic tendency to choose one alternative over another in the absence of an identified reason is a common observation in two-alternative forced-choice experiments. I will present experimental and theoretical evidence that even in an idealized experiment, in which the settings are symmetric, idiosyncratic choice bias inevitably emerges from the dynamics of competing neuronal networks. Finally, I will discuss the stability of the bias over months and the implications regarding the stability of synaptic connectivity.