PARIS LODRON UNIVERSITÄT SALZBURG

Psy-Talks

Department of Psychology & Salzburger Gesellschaft für Psychologie

Talk on Tuesday, 30. Juni 2026
Start: 14:00 till 15.15 Uhr
in HS 424
The talk will be presented in English

Wired to Adapt: Brain Plasticity, Prediction, and the Aging Mind

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The human brain continuously reshapes its structure and function in response to experience, learning, and aging. This talk presents converging evidence from EEG, ERP, and structural MRI to reveal how the brain sustains cognitive resilience across the lifespan. I will demonstrate how prediction shapes the brain's encoding of statistical regularities, with neural signatures such as the N300 and beta oscillations reflecting the precision of learned temporal patterns. I will further show how hemispheric asymmetries underpin semantic and language processing, and how these finely tuned mechanisms are challenged by the aging brain. Critically, structural MRI evidence reveals that multilingual experience preserves gray matter integrity in the left anterior temporal lobe, reinforcing social semantic processing and buffering against loneliness in aging populations. Together, these findings position cognitive reserve as a dynamic, experience-driven capacity rooted in the brain's remarkable adaptive potential.