



BCL5

5th Workshop on Brain, Computation, and Learning



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Effect of Familiarity on Face Processing

Abstract: Familiarity plays a crucial role in modulating the cognitive and neural processes involved in face recognition. This effect is evident in both behavioral performance and neural responses, offering important insights into social cognition, memory, and clinical conditions marked by face-processing impairments, such as prosopagnosia and autism spectrum disorders. The widespread use of face masks during the COVID-19 pandemic posed a novel challenge to facial recognition mechanisms. In this talk, I will explore how face masks impact recognition, focusing on the underlying neuropsychological processes employing a novel fully data-driven approach. Specifically, we investigated how general exposure to masked faces and repeated visual experience with masked, personally familiar individuals influence recognition ability. Our findings reveal that while masked famous and unfamiliar faces elicit increased neural effort—indicative of heightened processing demands—this effect is absent for masked familiar faces. This suggests that visual experience with specific masked individuals facilitates perceptual adaptation and recognition. Importantly, this learning effect appears to be identity-specific and does not generalize to well-known, but less personally familiar, faces. Together, our results provide both behavioral and neural evidence that personal familiarity supports perceptual learning of occluded faces, highlighting the unique role of individual-specific experience in face processing.