Programme de la journée

du 12 janvier 2021

14h30-14h50	**Cendra AGULHON, Marie PIERON (coordinatrices)** **Sylvie CHOKRON, Klara KOVARSKI et Sylvie TORDJMAN** Introduction
14h50-15h10	**Mark WEXLER** Integrative Neuroscience and Cognition Center (INCC), UMR 8002, Université de Paris, Paris Variations interindividuelles des biais perceptifs
15h10-15h30	**Bruno ROSSION** Centre de Recherche en Automatique de Nancy (CRAN), UMR 7039, Université de Lorraine, Nancy A la recherche de biomarqueurs objectifs de déficits de reconnaissance faciale avec la stimulation visuelle périodique rapide
15h30-15h40	Pause
15h40-16h00	**Quentin GUILLON** Université Toulouse Jean-Jaurès Sensibilité à la cinématique du mouvement à travers les yeux ?
16h00-16h20	**Andreas FRICK** Neurocentre Magendie, U1215, Bordeaux Mécanismes sous-jacents au traitement atypique de l'information sensorielle dans les circuits néocorticaux d'un modèle génétique de souris autiste
16h20-17h00	Discussion générale et perspectives futures du CAV

Abstracts/ Résumés des présentations

du 12 janvier 2021

Mark WEXLER

Interindividual variations in perceptual biases

As opposed to most interindividual differences measured on low-level perceptual tasks--which are usually quite small--we have found families of ambiguous stimuli whose perceived appearance is extremely variable from one individual to the next, and rather stable within individuals. Such stimuli exist in both visual and auditory modalities, and constitute perceptual biases. Moreover, longitudinal studies over time scales ranging from one hour to several months show that these biases can evolve in very different ways from one individual to the next. It would be interesting to measure these biases in a number of clinical populations, including autists, whose perceptual biases have been found to be abnormally weak.

Bruno ROSSION

Towards objective biomarkers of face recognition impairments in ASD with fast periodic stimulation

There is high degree of inconsistency between studies searching for implicit electrophysiological markers of difficulties in understanding facial signals in ASD. A promising approach is fast periodic stimulation of face stimuli, providing objective, sensitive and reliable quantitative measures in the EEG spectrum. Recent studies showing the advantages of this approach for face identity and expression recognition will be briefly illustrated, with an emphasis on conceptual and methodological issues.

Quentin GUILLON

Sensitivity to movement kinematics through the eyes?

The way we move influences our ability to perceive, interpret and predict the actions of others through the construction and updating of action representations. Although not part of the diagnostic criteria, atypical motor control and movement kinematics have been described in autism. The extent to which people with and without autism are implicitly sensitive to movement kinematics was studied through pupillometry and eye movements.

Andreas FRICK

Mechanisms underlying atypical sensory information processing within the neocortical circuits of a genetic autism mouse model

Human studies have coined the 'noisy brain' hypothesis to explain atypical sensory information processing in patients with autism spectrum disorder (ASD). However, understanding its neurobiological underpinnings requires rigorous testing of this hypothesis in animal models. In mouse somatosensory cortex, we measured *in vivo* the activity of layer 2/3 neurons evoked by tactile paw stimulation in the Fmr1-/y mouse model for ASD, combined these measurements with those of spontaneous activity and probed causality with changes in neuronal intrinsic excitability. Notably, we found a complex and nuanced phenotype composed of both cellular and circuit alterations. Further analysis revealed that most parameters were dramatically more variable in the ASD model, both across trials within individual neurons as well as across the entire cell population. Our results could explain a number of ASD phenotypes and suggest a targetable mechanism at the level of neocortical circuits.