

## **121 | Emotional Induction Through Music. A comparison between European and Latin American music**

### **Cognition, Behavior, and Memory**

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Music can induce different emotional states on listener, a phenomenon termed Emotional Induction through Music (EIM). It has been mainly explained by intrinsic musical features, which lead to a classification of songs in two categories: arousing and relaxing. However, other aspects as contemporaneity and cultural proximity with music might influence EIM. This study aims to assess the EIM comparing music from different contexts and periods (European vs Latin American). Self-report measures (valence, arousal) and physiological parameters (heart rate variability [HRV] and skin conductance level [SCL]) were evaluated on an Argentinian sample (28 healthy volunteers, M = 27.45; SD = 1.31). After a three-minute physiological baseline, participants listened to musical fragments (arousing Latin American vs relaxing Latin American vs arousing European vs relaxing European) for three minutes each one. After each excerpt, participants rated their valence and arousal. Results showed that arousing Latin American music was rated as more positive and arousing than European music, and both were more positive and arousing than relaxing music. Physiologically, both arousing music elicited higher SCL than relaxing music. Moreover, arousing Latin American music presented an increase in low frequency component (HRV indexes) compared whit baseline and European arousing music. Thus, contemporaneity and cultural proximity could generate a differential effect and enhance EIM.

## **123 + CO-4-Microcine | Streptozotocin induces behavioral changes and reactive astrocytes in a sex-dependent manner**

### **Cognition, Behavior, and Memory**

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Male rodents have been the default model organism in neuroscience research, including for the intracerebroventricular (icv) streptozotocin (STZ)-induced Alzheimer's disease (AD) model. Our objective was to compare the effect of icv-STZ injection in male and female rats with and without ovaries. Male rats were separated into control and STZ groups. Fourteen days before STZ injection, half of female rats were ovariectomized (OVX), or left with intact ovaries (Female group), and then separated into control or STZ groups on the same day as male rats. Two weeks later, behavioral tests were conducted for spatial memory (Barnes Maze) and depressive-like behavior (Forced swimming test). Immunofluorescence analyses were performed in the hippocampus. STZ affected spatial memory and increased depressive behavior in male, but not in female rats. We assessed GFAP expression and JAK2/STAT3 signaling activation, and we found sex differences on astrocyte reaction to STZ, with astrocyte reactivity evidence only in male rats. Also, STZ induced synapse loss in male rats, although it did not affect the expression of astrocyte proteins relevant for synapses, independent of the sex. We conclude that STZ affected differentially male and female rats, and OVX did not render the rats more vulnerable to STZ. Therefore, experimental design changes should be considered in order to set up a female sporadic AD model, and sex differences in the icv-STZ model should be addressed and further studied.

## 122 | Reactivation of emotional memories

### Cognition, Behavior, and Memory

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Emotional memory is defined as the mental representation of events with an affective load, which are stronger and less susceptible to forgetting than neutral ones. After a cue-reminder presentation, consolidated memories can be reactivated and strengthened or updated by reconsolidation. Some studies compare the effectiveness of presenting all the original material (complete reminder) or a part of it (incomplete reminder) to reactivate memories. The present study aims to hone a paradigm to reactivate emotional memories and to assess such effect on memory persistence. We evaluated complete and incomplete reminders to reactivate visual and verbal emotional memories, using a three-day protocol. On Day 1, participants learned a list of emotional and neutral pictures (Experiment 1, N = 43) or words (Experiment 2, N = 59), and were assessed through a free recall task. On Day 2 (24 hours later), reactivated groups were exposed to a complete or incomplete reminder, and non-reactivated groups were not. On Day 3 (15 days later), memory persistence was evaluated through free recall and recognition tasks. Both reactivated groups recalled more items than non-reactivated ones on Day 3. Moreover, emotional content was better remembered than neutral only in free recall. In recognition task, neutral words were better recognized than emotional ones. This effect was absent for pictures. These findings suggest that complete and incomplete reminders can reactivate and strength emotional memories.

## **124 | Using the observational fear learning paradigm to study neural circuits underlying social memories in mice**

### **Cognition, Behavior, and Memory**

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Social learning refers to situations in which individuals learn from other members of their social group. Both humans and non-human animals can acquire fears by witnessing their conspecifics being subjected to adverse events. In rodents, different paradigms exist to study social learning, such as observational fear learning (OFL). Although several studies have advanced the understanding of the circuits involved in social learning, mechanistic understanding at the circuit level remains limited. The overall goal of our long-term project is to comprehend the neural circuits involved in social learning. Specifically, we are interested in understanding whether oxytocin, crucial for processing social information, is involved in the formation of memories acquired through observation. Here, we present the development of the OFL paradigm using mice, in which a subject observes a conspecific being trained in a fear conditioning task. The demonstrator learns directly by experiencing tones (conditioned stimulus) and electric shocks (unconditioned stimulus), while the observer associates the tones with the distress of its conspecific. Additionally, we showcase experiments designed to investigate the role of oxytocin in OFL. Observational memories provide a useful model for studying the neural mechanisms of vicarious learning, and their investigation is crucial for gaining a better understanding of disorders that exhibit alterations in the social transmission of information, such as autism.