Neural correlates of melodic transmission: a window in music evolution

Recent theoretical and experimental studies suggest that cultural transmission plays a key role in the evolution of human languages. Languages may adapt in significant ways to the users’ minds when they are culturally transmitted and learned, thus increasing their structural organization and learnability. To what extent similar mechanisms might be at work in the musical domain? What is the nature of the underlying neural processes and how differences between individuals might affect the evolution of musical material? To address these questions we first conducted an experiment on the evolution of melodic forms using iterated signaling games as a laboratory model of cultural transmission. The progressive emergence of meaningful, non-random, patterns there observed suggest a key role of cultural forces and learning constraints in the convergence towards structural regularities that characterize most of musical cultures of the world. In the part that followed, we explored to what extent idiosyncrasies in low- and high-level auditory processes, as measured by event-related potentials (ERPs) in an oddball paradigm, may predict individual players’ contribution to the evolution and the structural reorganization of the musical codes.

Core literature:
Christiansen MH, Chater N. 2008 Language as shaped by the brain. Behav. Brain Sci. 31
Naatanen R et al. 1993 Development of a memory trace for a complex sound in the human brain. Neuroreport 4
Zatorre RJ. 2013 Predispositions and plasticity in music and speech learning: neural correlates and implications. Science 342

BIO
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