Music technology has far surpassed its traditional role of producing, amplifying, distributing sounds. In the context of Music Information Retrieval (MIR) and Music Cognition Research (MCR), technologies have achieved functional agency. They can anticipate and simulate human perception.

Although theories of ecological listening (Eric CLARKE) and of embodied cognition (Marc LEMAN) have hinted at various shortcomings and indeed the naivety (David MEREDITH) of the engineering approach, it is vital to develop richer concepts of musical knowledge representation (Geraint WIGGINS) which balance quantitative–formalist and ecological requirements.

Drawing on the theory of sciences and of mediation (Bruno LATOUR, Antoine HENNION, Régis DEBRAY), it will be asked (i) which technical actors, analytical procedures and programming routines populate the audiosphere and (ii) what concepts of listening emerge from them. This critical perspective engages the interplay of engineering, cognitive, computational and musicological expertise and technical resources that lies at the heart of the research projects under review and that organizes the cultural field of listening.

The hypothesis defended here is that (1) advanced technologies paradoxically strengthen the illusion of causality and of a specificity of data, as if listening would equal information processing; (2) that naïve applications of musical computing tend to disregard the situatedness and non–specificity of musical listening; (3) that technology’s self–empowerment as active intermediary has widely gone unnoticed, despite its deep implications for a post–subjective listening in which audio perception is no longer a human prerogative.

Two set–ups in will be addressed: (1) the autobiographical memory detection in music cognition studies, using MRI (Petr JANATA); (2) an artistic project that features EEG–driven bio–feedback to trigger pre–composed musical modules for ‘live’ performance (“Thought Conductor” by artEmergent). Both set–ups use elaborate data representations and situate listening within post–subjective distributed networks, a direct outcome of technology’s agency.