

Geometries in sound: A way to empower the listener towards certain genres of contemporary art music

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Disciplinary background A. Disciplinary background A. Historical Musicology.

Within this large group of studies on music perception, only a small number deal with the contemporary experimental scene (e.g. Deliege, 1989; Windsor, 1995 ; Kozak, 2021). This lack seems paradoxical as many genres of experimental music are themselves concerned with these very questions of sonic perception. While the consumption and appreciation of contemporary art music still largely follows general mechanisms that are dependent on familiarity, background, economy and market (Bourdieu 1979, Menger 2004), this paper proposes that contemporary and experimental music practices are particularly well suited to being studied at the perceptual level (Wanke 2021).

Disciplinary background B. Disciplinary background B. Cognitive Sciences.

Recent advances in the field of cognitive sciences have led to the definition of new perspectives on the diverse mechanisms underlying our aural experience of sound and music. These perspectives include embodied music cognition, multimodal approaches, music neuroscience, and Gestalt-based approaches, opening up to the interdisciplinary investigation of this research area (Bregman 1990; Lehar 2004; Leman 2005; Brattico 2013). I carried out a listening survey in order to explore the potential of certain genres of contemporary art music to engage us on a different level than with more conventional music genres

Abstract

The listening survey –consisting of a series of questions to evaluate the degree of matching between audio samples and visual images– aims to explore the nature of the connections between music and its mental representations evoked during listening (Eitan et al 2006; Johnson 1987) The goal of this paper is to investigate how image-sound matching may function as a boost for listening and to strengthen a particular perceptual engagement of certain genres within contemporary art music.

These genres –that encompass post-spectralism, minimalism, electroacoustic music, glitch-electronica, and various offshots of IDM (dubstep, techno)– revolve around the creation sonic textures and masses in motion organized within sound configurations (Wanke 2021; Solomos 2019) This music is often associated, during listening, with visual and tactile sensorial qualities and abstract geometries organized according to Gestalt and kinaesthetic principles. The results of the listening survey tell us that the sound configurations typical of this music tie in with geometries, shapes, motions, and tensions that call in forces of physical world , and evoke a set of gestures and actions that we assimilate and integrate according to our diverse backgrounds. Musical episodes containing contrasting sound masses, transient appearances of fragile overtones, or repeated glissandi arise mental representations such as, for instance, solid blocks, oscillating lines, or descending profiles. The level of embodiment however depend to the schema-driven associations which draw on our experiential cognition of the external world: therefore a descending glissando may simply elicit an abstract declining line or an embodied sense of falling. Given that there is always one image that mismatches with the audio sample, there is a significant matching between spectrotemporal features of the audio sample and

images-actions (independently from musical training). However, participants with a low familiarity with the audio samples tend to find more appropriate the images depicting a limited embodiment.

Interdisciplinary implications. A research that ties in static descriptions of the cognitive science and behavioural processes the musical experience, serves as a model for mediated research between musicology, cognitive psychology and neuroscience. By exploring a cross-modal type of stimuli this study can be further applied (i) in the field of music therapy for typical cases such as synaesthesia and amusia, and (ii) at educational level. The ultimate outcome focuses in fact on how this music –often regarded as an elitist form of culture that has little impact on society in general– works as a cognitive resource for creative, interpretive and didactic endeavours and whether this study can provide new tools that can empower the listener to access this kind of music.

References

- Deliège, I. (1989). Approche perceptive de formes musicales contemporaines. In McAdams S. and Deliège I. (Eds.) *La Musique et Le Science Cognitives*. P. Mardaga, 305–26;
- Windsor, L. W. (1995). *A perceptual approach to the description and analysis of acousmatic music*. PhD Thesis. City University
- Kozak, M. (2021) *Enacting musical time*. Oxford University Press.
- Bourdieu, P. (1979). *La distinction. Critique sociale du jugement*. Ed. de Minuit.
- Menger, P-M. (2014). *The economics of creativity*. Harvard University Press.
- Wanke, R. (2021). *Sound in the ecstatic-materialist perspective on experimental music*. Routledge.
- Bregman, A. S. (1990). *Auditory scene analysis*. MIT Press.
- Lehar, S. (2003). Gestalt isomorphism and the primacy of subjective conscious experience: A Gestalt bubble model. *Behavioral and brain sciences*, 26, 357–408.
- Leman, M. (2008). *Embodied music cognition and mediation technology*. MIT Press.
- Brattico, E. et al. (2013). The neuroaesthetics of music. *Psychology of aesthetics, creativity, and the arts*, 7(1), 48–61.
- Eitan, Z. et al. (2006). How music moves: Musical parameters and listeners' images of motion. *Music perception: an interdisciplinary journal*, 23(3), 221–47.
- Johnson, M. (1987). *The body in the mind*. University of Chicago Press.
- Solomos, M. (2019). *From music to sound*. Routledge.