

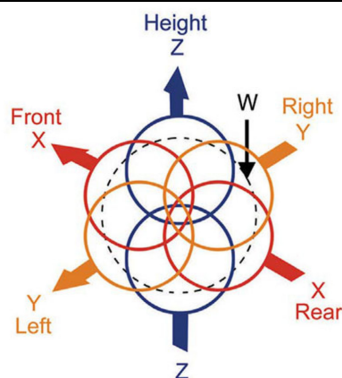
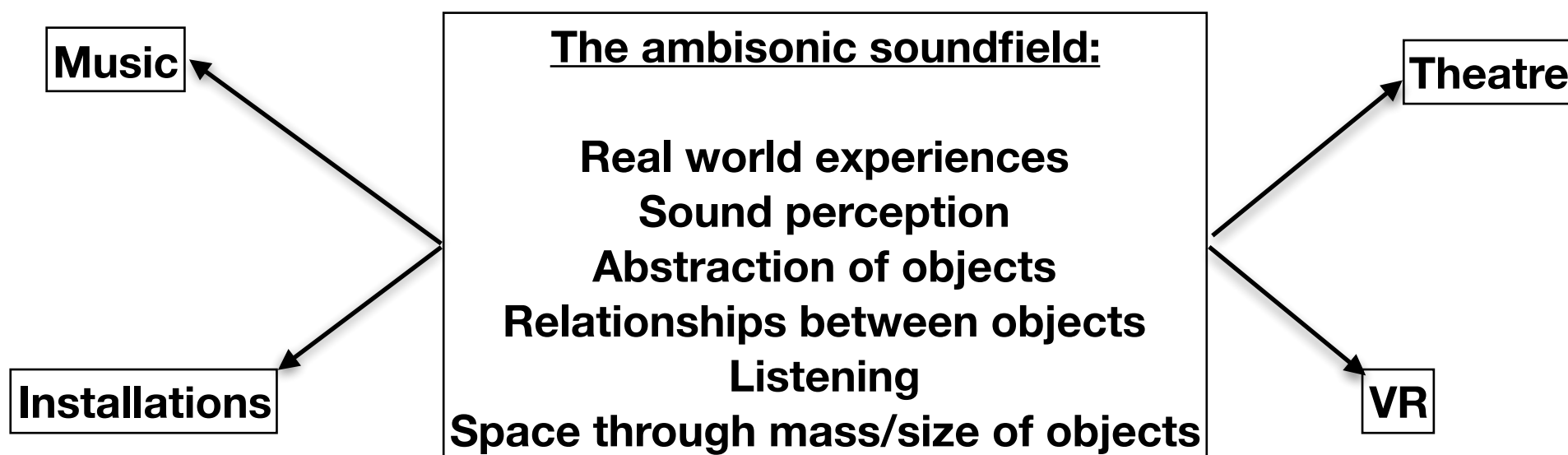


Intentional objects and soundfields

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Abstract

This project is an exploration of spatial audio systems and sound objects. It addresses aesthetics and experiments at the convergence between signal processing applications and musical creation. Spatial audio describes a set of systems and methods for reproducing multichannel sound for either loudspeakers or headphones, be it for artistic, entertainment or research-based uses. This project focuses on concepts of spatial audio systems in relation to Pierre Schaeffer's system of musical practice. The sound object is conceptualized as a basic unit of perceived sound and Schaeffer's music theory provided a comprehensive system for listening, analysis, classification and synthesis of sound objects but spatial features in this system have been given little attention. This project seeks to address possible spatial extensions to Schaeffer's typomorphology.



Ambisonics is a method of recording or synthesising the spatial information in a soundfield. This is done through encoding/decoding methods, with possible spherical transformations. Traditional *spatialisation* changes the direction of a sound source through angular and/or amplitude differences but does not provide the listener with “access” to distances and proximities, immersion, stable spatial relationships and an understanding of a sound’s mass, size or identity.

This project explores the relationships of sound objects to soundfields through applications to “real-world” scenarios of theatre projects, sound installations, VR-applications, music composition and software development.

