

Chapter 7

An Acoustic Communication Framework for Game Sound: Fidelity, Verisimilitude, Ecology

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ABSTRACT

This chapter explores how notions of fidelity and verisimilitude manifest historically both as global cultural conventions of media and technology, as well as more specifically as design goals in the production of sound in games. By exploring these two perspectives on acoustic realism through the acoustic communication framework with its focus on patterns of listening over time, acoustic communities, and ecology, I hope to offer a model for future theorizing and exploration of game sound and a lens for in-depth analysis of specific game titles. As a novel contribution, this chapter offers a set of listening modes that are derived from and describe attentional stances towards historically diverse game soundscapes in the hopes that we may use these to not only identify but also evaluate the relationship between gaming and culture.

INTRODUCTION

Within game studies—a relatively young discipline itself—the field of game sound has already experienced growth, however there are still scarce resources and analytical frameworks for understanding the role of sound for purposes of cultural critique, historical analysis or cross-media examination. Frameworks such as the IEZA one (Huiberts & van Tol, 2008; Wilhelmsson &

Wallén, 2011), which builds on several existing design guideline systems for game sound (Ekman, 2005; Grimshaw & Schott, 2007; Jørgensen, 2006; Stockburger, 2007), and particularly Grimshaw's (2008) conceptualization of an acoustic ecology in first-person shooter games are beginning to pave the way for more in-depth explorations into understanding, analyzing and representing the role of sound in games.

In addition to the more established foundations of game sound in music synthesis, algorithmic sound generation, and real-time implementation of

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sound effects (Brandon, 2004; Collins, 2007; Friberg & Gärdenfors, 2004; Roeber, Deutschmann, & Masuch, 2006), there is a need for building more general theoretical and analytical frameworks to describe the various elements of game sound and their role within the game's designed soundscape and its informational ecology. Examples of rich theoretical works on game sound are still few (Collins, 2008; Grimshaw, 2008). I would like to propose a framework for studying game sound that engenders a multi-disciplinary perspective with a specific focus on listening as a dynamically developing, socio-cultural activity influenced by and influencing cultural production and experience. This framework, based on the acoustic communication model developed by Barry Truax (2001) and inspired by R. Murray Schafer (1977) combines media histories with the current technological and cultural reality and takes a critical analytical stance towards discussing the way media shapes our world.

Delivering a full history of any game sound predecessors and tracing critical, socio-cultural perspectives of every game genre in existence is not only an ambitious task, but is one that has been done in parts by both scholars and game writers (Collins, 2008; McDonald, 2008). Instead, I will focus on two particular aspects of game sound—fidelity and verisimilitude—and situate them within the interdisciplinary framework of analysis that the acoustic communication model offers. They are two sides of the same idea representing notions of *realism* or *reality* in game soundscapes. They reflect long-standing cultural ideals and production values whose histories transgress radio, cinema, and real-world environments. By juxtaposing the two ideas in this manner I hope to elucidate qualities and features of game sound both in a richer way and within a socio-historical discursive context. Fidelity reflects the development of sound in games from a technological perspective while verisimilitude reflects the cultural emergence of authenticity, immersion and suspension of disbelief in cinema,

and characterizes the *magic flow* state in games. Finally, I'd like to connect both these ideas to acoustic ecology and particularly to the concept of *acoustic community*, which includes the real situation of a player's own acoustic soundscape in addition to the game's sonic environment, interlaced in a complex ecology.

THE ACOUSTIC COMMUNICATION MODEL: BACKGROUND AND RELEVANCE TO GAME SOUND

The concept of *acoustic communication* articulated by Truax (2001) is a framework that attempts to bring multi-disciplinary perspectives into the study of sound reception as well as sound production and that provides a structure for analyzing and understanding the role of sound in contemporary culture, in media, and in technology. Its roots lie in the tradition of acoustic ecology that was the basis of Schafer's work in the late 1960s and 1970s: work that is already referenced by several authors (Grimshaw, 2008; Hug, 2011). The following history helps contextualize and focus the particular perspective that acoustic communication has taken on.

A pioneer in the field of acoustic ecology, Schafer first defined the notion of a *soundscape* to mean a holistic system of sound events constituting an acoustic environment and functioning in an ecologically balanced, sustainable way (Schafer, 1977). Born out of the threat of urban noise pollution, Schafer focused on conceptualizing and advocating an ecological balance in the acoustic realm. He developed the terms *hi-fi* and *lo-fi* to describe different states of aural stasis in the environment. A *hi-fi* soundscape, exemplified in Schafer's view by the natural environment, is one where frequencies occupy their own spectral niches and are heard distinctly, thus creating a high signal-to-noise ratio. A *lo-fi* soundscape, on the other hand, often exemplified by modern urban city settings, is one where amplified sound,

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