

Chapter 6

A Combined Model for the Structuring of Computer Game Audio

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ABSTRACT

This chapter presents a model for the structuring of computer game audio building on the IEZA-framework (Huiberts & van Tol, 2008), Murch's (1998) conceptual model for the production of film sound, and the affordance theory put forth by Gibson (1977/1986). This model makes it possible to plan the audio layering of computer games in terms of the relationship between encoded and embodied sounds, cognitive load, the functionality of the sounds in computer games, the relative loudness between sounds, and the dominant frequency range of all the different sounds. The chapter uses the combined model to provide exemplifying analyses of three computer games—F.E.A.R., Warcraft III, and Legend of Zelda—. Furthermore, the chapter shows how a sound designer can use the suggested model as a production toolset to structure computer game audio from a game design document.

INTRODUCTION

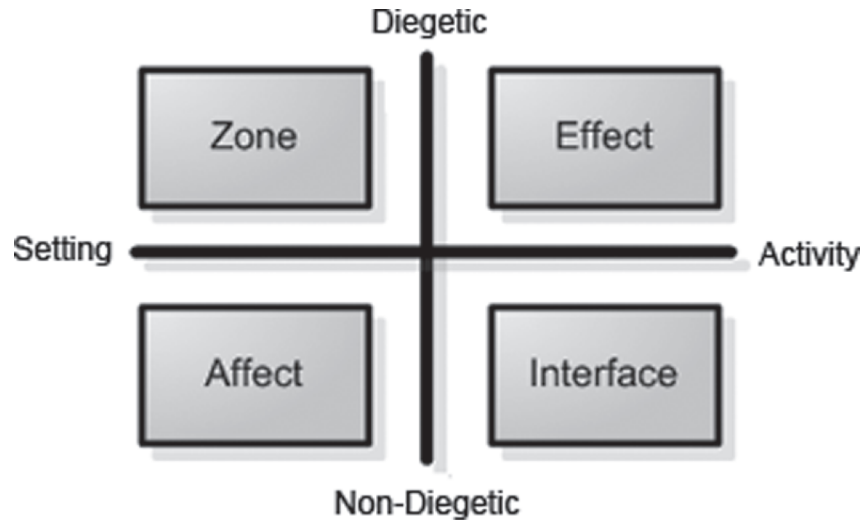
Computer game audio is an often neglected area when analyzing and producing computer games (Cancellaro, 2006; Childs, 2007; Marks 2001). The same seems to be the case when analyzing or producing movies (Murch, 1998; Thom, 1999;). There is a general lack of functional models, for the analysis as well as the production of computer game audio, even though some good examples

of functional models, such as Sander Huiberts and Richard van Tol's (2008) IEZA-framework (Figure 1), are available. The IEZA-framework is also discussed in Droumeva (2011).

In this chapter, we use the IEZA-framework in combination with Walter Murch's (1998) conceptual model for film sound (Figure 2). Why combine these two different areas, that is, a model concerned with computer game audio and another with film sound? As Huiberts and van Tol (2008) have noted, film sound is a “field of knowledge that is closely related to game audio”

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Figure 1. Huiberts and van Tol's IEZA-framework for the analysis and production of computer game audio into which we have added frames for the different categories. Adapted from Huiberts and van Tol (2008)



(p. 2). Although these two areas are related and do share some common ground, they are also quite different in many ways. It is striking that when we think about games we use the term audio, yet when we think about film we seem to primarily use the term sound. In our opinion, there is a difference between these 2; audio is a more technology-based term than sound. A sound is something you hear which in turn leads to listening, while audio is something that precedes sound but with stronger technological connotations as a term. Film sound is, as Murch notes, normally composites of sound in several layers, an assertion which precedes a more thorough discussion of this model (Figure 2). Murch concludes that we may be wise to limit those layers to a total of 5 different ones simultaneously played back on the sound track of a movie. A common method of separating the different parts of film sound is a typology consisting of 3 separate categories: speech, effects, and music (Bordwell & Thompson, 2001; Sobchack & Sobchack, 1980). This typology is originally based on the technology of early sound films and its 3 tracks, constituting a practice-oriented separation of sound into different categories. It also corresponds well to Murch's

(1998) conceptual color model (Figure 2), which spans from language that clearly has relations to speech (encoded) via effects to music (embodied). With such a typology rather clearly differentiating the 3 basic entities of film sound from each other, we might jump to the conclusion that film sound is fairly easy to create and that computer game audio could be modeled, more or less, on the practice and theories of film sound. Since we only have 3 basic categories of sounds that can be used and combined to create a sonic environment, how hard can it really be? However, film sound is more complex than this initial typology suggests and we address this in this chapter. Furthermore, computer game audio works under quite different conditions than film sound does: film sound is fixed, stored and played linearly. This does not, however, mean that sound in movies needs to be synchronous with the visual, since it might be narrating at a different level that does not have its basis in the present image (Hug, 2011; Kubelka, 1998; Pudovkin, 1929/1985). Computer game audio, on the other hand, is dynamic and stored as a resource for the player to use in a non-linear fashion. An invariant set-up of sounds is stored in a database, but the use of objects that would

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