

Comparing designers' and listeners' experiences

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Abstract This paper compares the listening experiences of non-experts and the designers of two sound designs. To date, no such comparisons have been examined empirically, and so for ease of comparison, repertory grids were chosen to explore these experiences, which preclude the need for listener training. The results suggest that (a) it is meaningful to compare designers' and non-experts' listening experiences, (b) points of agreement and disagreement are readily identified and (c) the use of repertory grids is a practical means of conducting such studies. The findings further suggest that a taxonomy of sound attributes based on these experiences rather than designers' intuition or predilection is also possible.

Keywords Soundscape · Repertory grid · Listeners · Designers · Listening

1 Introduction

Sound is an important element in creating or enhancing a sense of presence (Serafin and Serafin 2004) as sound can inform listeners about the dimensions of a place—real or virtual—and provide a sense of its size and the relative distances of objects within its confines (Tuan 2001). Sound, in the context of broadcast and interactive media, needs to be designed. It is often used as a “sleight of hand” (Chion 1994) making the audience believe that something has happened (e.g. coconut shells mimicking the sound of horses' hooves). Foley artists will use stand-in objects made of similar materials with equivalent interactions to

represent sound events that cannot be captured any other way (Ament 2009; Viers 2008). Different media have their own emphases, for example, within computing, greater weight is placed upon making sound events informative (Sikström and Berg 2012), while film places greater emphasis on the dynamics of the sound events (Maasø 2008) and video games use sound to communicate spatial cues (Cullen et al. 2012).

Rumsey (1998) tells us that there are high levels of agreement between (audio) experts with regard to audio reproduction quality, whereas non-experts show greater variability. Yang and Kang (2005) have highlighted the differences between measurements and evaluations and attribute much of this variability in listeners' experiences to different types of sound sources and levels of perceived pleasantness. Tardieu et al. (2009) have also found that laboratory tests of sound signals do not fully correspond with tests conducted under real-world conditions.

Audio taxonomies are methods of describing sounds using readily identifiable concepts and terms (Cano et al. 2004). The problem with taxonomies of auditory experiences has been explored in the field of acoustic ecology (Schafer 1977; Truax 2001) but the techniques have not been widely adopted outside the field. To a limited extent, the taxonomies of auditory experiences have been explored for sound design purposes (Gaver 1993; Grimshaw 2008; Liljedahl and Fagerlönn 2010). The intent has mostly been upon communication between auditory professionals, rather than as a mechanism for comparing listener and designer experiences (Brazil and Fernström 2009; Frauenberger and Stockman 2009). Audio professionals spend a considerable amount of time learning to shift between critical and natural listening, and Coleman (2008) highlights the distrust that designers have for non-experts' descriptions of auditory environments. This mistrust might

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