

Aesthetic strategies in sonification

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Abstract Sound can be listened to in various ways and with different intentions. Multiple factors influence how and what we perceive when listening to sound. Sonification, the acoustic representation of data, is in essence just sound. It functions as sonification only if we make sure to listen attentively in order to access the abstract information it contains. This is difficult to accomplish since sound always calls the listener's attention to concrete—whether natural or musical—points of references. Important aspects determining how we listen to sonification are discussed in this paper: elicited sounds, repeated sounds, conceptual sounds, technologically mediated sounds, melodic sounds, familiar sounds, multimodal sounds and vocal sounds. We discuss how these aspects help the listener engage with the sound, but also how they can become points of reference in and of themselves. The various sonic qualities employed in sonification can potentially open but also risk closing doors to the accessibility and perceptibility of the sonified data.

Keywords Sonification · Aesthetics · Historic context

1 Introduction

Sonification, today, is an interdisciplinary practice ranging from scientific applications to sound art and composition. Following an early definition by Kramer (1994), it is often understood in practical terms as “representing data with non-speech sound”. This characterization, however, is

rather coarse and merely addresses challenges in designing, composing or programming sonifications. From a musical perspective, the sonification of data continues from where mimesis, in the tradition of program music and in the indexical function of sound recording, ends. From the perspective of the theory of knowledge and the history of science, we can speak of sonification when sound is used as a medium that represents more than just itself. In other words, sound becomes sonification when it can claim to possess explanatory powers: when it is neither solely music nor serves as mere illustration. Although there are historic and contemporary examples in which sound is the medium used to promote scientific insights, the word ‘insight’ itself shows how much language metaphors related to knowledge production point to the primacy of vision. We will examine historic examples in which sonic representations or sonic manifestations of natural phenomena were used to arrive at general conclusions, extrapolating and abstracting from the actual phenomena themselves.

The data substrate for sonification today increasingly originates from our virtual or digital surroundings. Sonification therefore often aims to represent something that lacks a natural sonic reference point. It is challenging to find sounds that are at all suitable for these abstract virtual entities, because any perceived sound always refers to earlier sounds that we have experienced in our natural or cultural contexts.

This is a problem shared by scientific as well as artistic approaches to sonification. It is interesting to observe how artists and researchers who employ sonification are careful to maintain or renegotiate links with everyday listening habits and cultural listening experiences.

In this article, we investigate these links to listening contexts and discuss their uses as aesthetic strategies in sonification. The notion of aesthetics to which we refer

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