TERRA NULLIUS

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ABSTRACT

The sonification Terra Nullius was created as a submission to the ICAD 2006 Concert Call. It focuses on a special aspect in data representation, the no man's land of missing values.

1. INTRODUCTION

Personally, I find one of the most interesting and challenging aspects of sonification to be that the data imply meaning. Sonification attempts to reveal this meaning and as a consequence, even abstract sound implies a very specific meaning.

2. DIMENSIONALITY AND MISSING VALUES

Dimensionality is one of the general orientations in this meaning, and is given in the form of aspects [1] like "access to drinking water" or "population" in the world social data set. Most of these data dimensions are quantitative, which means that they can be ordered along an axis - we can arrange the countries by any of the dimensions, and we can map the values from one dimension to a scale of values of a sound dimension. Often, however, not all values of one type have been measured.

What happens with those missing values? One can't generally expect to be able to interpolate a value from its geographic position. In a sound, silence is just as dominant as a tone. These non-values break gaps into the continuity of evaluation - they belong to another dimension within their dimension. Missing data not only fail to belong to the dimension they are missing from, they also fail to belong in any uniform dimension of "missing".

Being opaque, they do not communicate, they refuse transparency; on the other hand, they are not yet given, not yet fixed, and refer to the transparent openness of the act of measuring itself.

3. TERRA NULLIUS[1]

This short sonification piece orders countries along a special dimension in which there seem to be no data missing - their geographical longitude. It then sonifies missing data of 48 other data dimensions which are randomly chosen.

The spatial position of the sound is correlated to longitude, starting from 0 circling round the earth several times, like a spinning globe with the observer in the center. In the beginning, only the countries along the latitude of Greenwich are audible and in successive and faster rounds, more and more countries further away towards north and south are included. A band of filtered noise is used for each dimension that is missing, i.e. the noisier it is, the less we know. In the end the missing itself seems quite rich of information - only about what?
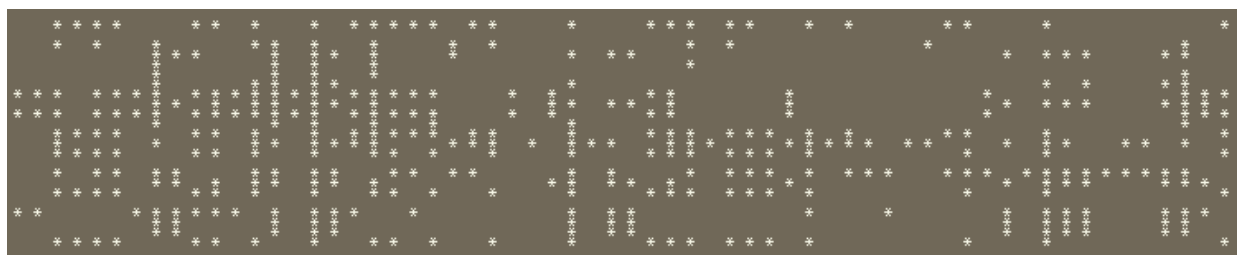

Figure 1. *Some missing data in countries between 35' and 65' latitude, ordered by longitude.*

4. REFERENCES

[1] Ueber die Hypothesen, welche der Geometrie zu Grunde liegen. (Habilitationsschrift, 1854, Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen, 13 (1868))

[1]The term terra nullius was used by colonial powers to refer to what they considered to be uninhabited land.