Nuclear detonations

(data sonification project)

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What's our project?

- Sonify the publicly released data about nuclear launches/tests from 1945 to 1998.
- Resulting musical track should be informative; launches by different countries or for different purposes should be clearly distinguishable.
- We think it's a really cool way to represent this interesting information, and call to people's feelings regarding this problem.

Speciality of the data

- Data is quite sensitive and not trivial to gather.
- A lot of variables allow for a great range of sounds.
- Covers a full timespan of 53 years (1945-1998).
- The final result should produce an emotional reaction from the listener.

Data characteristics

We decided to use the following 7 variables to base our sonification on:

- Date of detonation
- Country of origin
- Purpose
- Deployment type
- Geographical coordinates of the explosion
- Depth of explosion
- Power of the bomb

Musical mapping

It's very hard to predict exactly how a particular thing will sound in the end, so this is a very rough estimate.

- Date of detonation - *directly corresponds to time in the track*
- Country of origin - *musical instrument*
- Purpose - *octave of the note*
- Deployment type - *musical note*
- Geographical coordinates - *left and right channels volume*
- Depth of explosion - *lo/hi pass filter*
- Power of the bomb - *delay / reverb / ???*

What will we use to sonify?

- *Thought*: Standard tools have quite limited features. Since we're working with such an interesting dataset, we will have to come up with something else.
- *First idea*: use Javascript. Was dismissed, because of the lack of proper and low-level sound libraries.
- We decided to write a custom application in Processing language, well-known for its wide possibilities for art.
- Beads library will control the sound features.

Postscriptum

Here are some ideas, that we decided to implement if we have additional time remaining:

- Real-time sound generation (as opposed to pre-made track).
- Live visualisation of the data.
- Ability to pause, navigate and control the speed of playback (interactively).

Thanks for your attention! :)

Questions?