DAY 1

Greeting script (text sent to the participant)

Hi!

Thank you for participating in this study. This text describes the context of the study, its structure and offers you instructions on your participation.

This study is part of my master's thesis work at Aalto University, in the Computer, Communication and Information Sciences study path. My thesis studies abstract sound synthesis and how this as a computer-assisted tool could be used in composition work.

In this user study, we are testing the quality of the tool, so this study is not testing you nor your performance. If you find something useful or difficult, chances are that also others will, so your feedback is very important. Also this study is not testing its author nor the success of the master's thesis work.

Information gathered in this user study will only be used for research purposes in the thesis work and will be kept secure. Any published results will be compiled with other participants and reported anonymously.

Structure of the user study

The study is divided into two parts.

First part (**10—15** minutes)

1. Fill in a short questionnaire on your background here [link]. Your reply ID is **[ID]**, use this in the questionnaire.
2. Read the description of an **imaginary task** you are given below, under the Imaginary task title. You will find the instructions on the task and tools for solving it in the text.
3. Send the audio files you have selected for the imaginary task or links to them to **heidi.hassinen@aalto.fi** the latest by **[date, time]**. Include in your email the time codes and text labels, explained in the task instructions.

Second part (**35—45** minutes)

1. Participate in a Zoom call on **[date, time]**. During the call you will be interviewed and asked to fill in questionnaires. The link to the call will be sent later.

Thank you in advance!

Test script

Questions on the background

Participant answers to an online questionnaire. [link]

Brief and providing user input

Participant is given the instructions below. Participant does the task and provides user input.

Imaginary task

[one of the briefs]

In order to do the task, you are given an interactive system that uses Artificial Intelligence for abstract sound generation. The main idea of this system is to create abstract sounds based on user input which can be an exemplary audio and/or text.

Due to the amount of time the system needs for generating sounds, your interaction with the system is split into two parts. Firstly you will select your input that will direct the sound generation process, and later in this user study you will be presented the resulting generated sounds.

Now

1. Choose **two** audios (max 5 seconds long) of environmental or urban sound, for example a recording of a barking dog. You can either select audio files you have yourself or choose audio files from https://freesound.org/. You find instruction on how to use the website below.
2. If the audios you have selected are longer than 5 seconds and you do not have the means to cut the audio yourself, check the time code (for example 1:35—1:40) for the part you have selected.
3. Give a text label to both of the audios. This can be any 1—2 words in English language that describe the sound or its sound source. A text label could be for example 'dog bark'.
4. Send the selected audio files/links to them, possible time codes and the text labels to **heidi.hassinen@aalto.fi**.

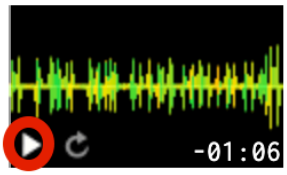
How to use freesound.org

On the main page of the website, write to this search field (on the right side of the page) words that describe what kind of sounds you would like to find. Press to the button, marked with a blue circle, to see a list of search results.

Group_of_Dogs_Barking.WAV

Group of angry **dog**s.

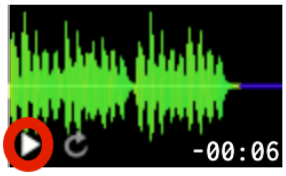
growling growl Group barking animal pet angry Dog dog bark anger Bark Dogs pets



Dog Barking, Single, A.wav

My neighbour's **dog** never stops... so I finally decided to get something out of it - here is a snippet. ...

Growling Barking growling dog Dog Bark bark barking



Dog Bark.wav

A furious **dog bark**ing.

bellow barking intimidating angrily bark aggressive barked growl OWI thunder breaking

The list of search results looks approximately like this. By pressing the play buttons, marked with red circles, you can listen to the sounds. Once you have found something you like, click on the name of the sound, underlined here with purple lines, to open the webpage of that particular sound. Copy the link to that page.

DAY 2

Greeting script (in the Zoom call)

Hi!

Great to see you again participating in this study.

As a recap, this user study is related to my master's thesis that studies abstract sound synthesis and how this as a computer-assisted tool could be used in composition work.

And in this user study we are testing the quality of the tool, so this study is not to test you or your performance, nor the author or the success of the master's thesis work.

This part will take approximately **35—45** minutes.

Do you have any questions at this point?

Let's get started!

Test script

First I would like to remind you about the task you are doing. Here is the description text you also saw before. *Present the brief.*

Earlier you started working on the task by selecting two audios and their text labels for the abstract sound generation system, and these inputs have now been used for generating sounds with Artificial Intelligence. So each generated sound is a reflection on the input you gave to the system.

The results of the generation process are part of the questionnaires you will fill in shortly. You will be able to listen to the generated audios multiple times. As we are testing multiple different ways to generate abstract sound based on an exemplary audio and/or a text input, you will hear 8 versions per each exemplary audio.

Level of interest & Similarity between the example and generated audio

Turn on screen-sharing on Zoom.

I will now briefly show you how the questionnaire form works. Through this link *(point at link)* you can open a generated audio in Google Drive and through this link *(point at link)* the exemplary audio. They open up in new tabs on which you can listen to them as many times as you want. Then there are questions on the audios that you will have to reply to. The questions measure interest and similarity. When you reply to the question on interest, think about it outside of comparing how similar the two audios are. Also there is a question related to the imaginary task you were given for this user study.

As a clarification, I point out that here *(show on form)* 'temporal shape' refers to how the sound evolves in time. For example if my example audio is a recoding of a barking dog, temporal shape would define where and how many times barks are heard in the audio. Also I point out that here *(show on form)* 'noise' refers to masses of undefined sound.

The questions will be the same for all of the 16 generated audios in this questionnaire. The first 8 pages have audios that were generated with your first exemplary audio, the last 8 pages with the second exemplary audio. For this reason the example audio here *(point at link)* will stay the same for 8 pages. You can notice from the name of the link when the exemplary audio changes.

Before you move to the next page, please close the Google Drive tabs opened for this page so that you will be sure to always answer to the questions on the right audios.

Turn off screen-sharing on Zoom.

Participant answers to the questions in an online questionnaire. [link]

CSI

Participant fills in the CSI study on the Webropol survey.

Meanwhile the user study organizer will go through the previous answers to find the highest and lowest rated generated audios. [link]

Adjective descriptions & Artistic value

Ask in the Zoom call the questions on the Google Form and write down the answers. [link]

Concluding script

Thank you for your participation!

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Troubleshooting:

- What kind of words can be written in the text prompt?
  - Any words in English can be written in the prompt. 1—2 words should be selected that best describe the sound or its sound source.