

GS/THST 5800: Sound: Experimental Practices, Critical Studies

Assignment 2: Genetic Ghosts

Due in stages between **Thursday June 9th and Wednesday June 15th**

Worth 4% of Total Course Grade

For this assignment, we will be evolving the spectre of a pool of sound files (noise?). This spectre arises from difference – that between our base representations of sound in the digital realm, and the models that we construct and impose upon these representations. In particular, the concept of “perceptually relevant” in the context of mp3 compression, and the sinusoidal (plus noise) model of sound that can be traced from Helmholtz, through telecommunications research into the present day. The goal is to see how these differencings can be extracted, taken up as sonic matter and propagated via a shared human evolutionary algorithm.

Steps:

- 1) Please give me 12 .wav sound files of 10-30 seconds (48 or 44.1 khz, 16 or 24 bit) by 6/9 @ 5pm.
- 2) I will provide you each with ID and name files accordingly. I will also give you rating template. Please rate each of these files on a 0-9 subjective scale and return the saved **plain text** to me with the format {yourIDnumber}.txt. Please do not add extra characters or spaces to the text. Please submit this by **6/10 at 5pm**.
- 3) I will then run an algorithm to determine 30 “fit” members of our population. You will draw only from this fit sub-population to create 12 new files as such:
 1. Choose 6 files and do three pairwise re-combination of sonic sections (as many as you would like). Remember not to do any overlapping of sounds or cross-fades. For each new “crossover/mating” operation, you will have created a new pair of files. Please export each pair separately as 44.1 khz/24bit .wav files. Make sure each file remains in the range of 10-30 seconds (do not throw away any sections). This will thus create 6 new “children” files. Reminder: make sure to mute one 'child' in Audacity while exporting the other, and vice versa.
 2. Choose 6 files (could be same as above or not) and create a “ghosting” of each one. Please use the 'MP3 Residual' process that I showed you in class for 2-6 of these files. If you would like, you can also extract the noise/residual from the signal using either Spear or Audacity, as demonstrated in class, for 1-4 files. Please export each ghosted file as 44.1 khz/24bit .wav files.
- 4) Please name the files as follows: XYZZ.wav, where X= Generation number (e.g. in the first pass we will be on Gen 1, then 2, etc.), Y = your secret ID number, ZZ = child number (e.g. 01 through 12. Please collect your 12 files in a .zip folder and send to me via Wetransfer or similar service by **6/12 at 10pm**.
- 5) I will upload this new GEN1 with new rating template asap after receiving them. Assuming all are in on time, please rate these files by **6/13 at 10pm**.

- 6) Again assuming all is on time, I will generate a new set of 30 “fit members” and post these. At this time, please re-do steps 3+4 to this content and send to me by **6/15 at 2pm**. This will take us to Generation 2. Note: the 2pm deadline is so that we can use these sounds in class.
- 7) Please feel free to ask me if you have any questions, especially on the crossover/mutations steps. This process gets much easier after you've done it once.