for gregory chaitin

• a continuous tone with a distinct pitch sustained for a long time. the entrance of this tone is preferably accented with a percussive attack that decays slowly. the exit is preferably accented with a percussive attack that is punctuated.

• a realization of a subset of at least 8 bits (preferably more) of the halting probability for some universal prefix-free turing machine.* the sequence of digits are read linearly, '0' and '1' representing two distinct events, which remain constant throughout. each event should create a sound with partials that interact/interfere with the sustained tone.

• the piece starts and ends with the sustained tone alone for a duration at the very least twice the length of the realization of the halting probability, which is ephemeral with respect to the total duration of the piece.

• perhaps with the performers and instruments out of view or in a dark space with the performers and/or instruments dimly (and directly) lit if necessary. perhaps as an installation. allowed to repeat. possibly with silence between repeats.

• clear. not loud. delicate. almost still. concerned with the phenomena of sound itself.

* an example of a halting probability is provided below. see anything written by chaitin on the number 'omega' (or chaitin's constant), which is the halting probability for some universal prefix-free turing machine. the given bit string was calculated by cristian calude et al. in 'computing a glimpse of randomness'

0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 1 1 0 0 0 1 0 0 0 0 1 1 0 1 0 0 0 1 1 1 1 1 1 0 0 1 0 1 1 1 0 1 1 1 0 1 0 0 0 0 0 1 0 0 0 0

-michael winter (new smyrna beach, fl; may, 2009)

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a realization for philip thomas

• grand piano

• the sustained tone should be a note on the piano with three strings. the entrance of the sustained tone is first actuated (and slightly accented) by the hammer and sustained by an e-bow on the middle string. the exit of the sustained tone is slightly accented by a punctuated (very short) strike of the hammer.

• the bits of the halting probability are realized on a note with two strings that is three octaves below the sustained tone. a '0' is realized by striking the strings gently (by depressing the key) while touching a node such that a harmonic of the open string sounds. the particular node may vary from tone to tone ('0' to '0'). perhaps explore random nodes that produce very high harmonics. a '1' is realized by gently striking the open string. all tones allowed to decay to nothing.