

EA Study No.4 “Krampus’ Snowglobe”, Op.au21 (Christmas 2011 - composed by Lucas Oickle)

“Krampus’ Snowglobe” uses a 23-second recording of “We Wish You A Merry Christmas” as performed by a Roman Inc. snow globe. All sounds heard in the entire piece, excluding the fireplace ambience - which is heard throughout - are created using only the original 23-second recording. Mathematical transformations of the original source material play a central motific role.

**The idea of trying to wind the snow globe in Variation II was Comrade Jacob’s, who came up with it and suggested it while listening to myself working on the study.*

Prelude: Niente - Ambience

I: Snowglobe Theme

II: Kawaii (Variation I)

III: Deterioration (Variation II)

IV: Atomization

V: Tempo Canon (Variation III)

VI: Microtonal Recapitulation

Postlude: Ambience - Niente

Analysis

Prelude

- [0.00-0.10]
- Fireplace fades in from nothing; there is ambience for ten seconds.

I: Snowglobe Theme

- [0.10-0.33]
- After being wound, the snow globe plays once through it’s theme *We Wish You a Merry Christmas*

II: Kawaii (Variation I)

- [0.33-0.51]
- The snow globe theme is accompanied by pedals (melody notes lowered by an octave) as well as recurring winds, which serve as motific connectors throughout the study. At the finish of once more through the now-accompanied theme, it begins to warble with reverb and a gong (the tonic chord slowed by 93.75%), along with the entire theme sped up 600%, signaling the beginning of Variation II; titled Deterioration.

III: Deterioration (Variation II)

- [0.51-1.16]
- The 2nd variation begins with a sedimentary gesture (the entire theme at 600% speed coupled with reverb synthesizing a large room), which covers the beginning of an iteration of the theme, at original tempo, but in reverse. (As this begins, the unaltered 600% theme accelerates and fades upward ‘into the atmosphere’, if you will). As the retrograde theme continues it is accompanied by the winding motif, as well as an echoing, rattling, percussive gesture (one of the winds slowed by 75%, pitch-slide to -75% tempo and down an octave, with added echo).
- The finish of the 2nd variation is signaled by another rattling percussive gesture (a shortened segment spliced from the previous iteration) which covers the entry of the original theme. The theme begins slowing down and falling in pitch, until the wind motif begins again, at which point the snow globe begins to slowly accel. and rise back almost to it’s original pitch. However, the wind motif ultimately deteriorates and the theme begins to fail again, finally ending before it’s able to start the final phrase.
- **The idea of trying to wind the snow globe was Comrade Jacob’s, who came up with it and suggested it while listening to myself working on the study.*

IV: Atomization

- [1.16-2.10]
- The final dying note of the ruined theme ellipses with a low ringing gong with minimal sustain (the cadence from the unaltered prime, slowed by 93.75%, resulting in sound 4 octaves lower than the original); also, at the same time, the sedimentary sound object activates, sliding downwards in tempo and pitch.
- A tempo-canon episode of slowed winds interjects, at the same time activating an isolated segment from the retrograde theme (slowed by 93.75%). Three unaltered, isolated retrograde segments play over this. At their end, the same slowed retrograde segment activates again, only 96.875% slower than the original retrograde segment. (At the same time, an overtone series of the same gesture occurs: this event playing at different speeds simultaneously, defined by 'overtone multiples'). The three unaltered segments recur, before drastically slowed winds interject - first 50, then 75 and then 87.5% slower than the original wind (while the 96.875% slower retrograde segment continues to run its course).
- When the fragment slowed 96.875% finally ends, the three isolated retrograde segments appear in a new, harmonized transformation. Mathematically, they have been transformed into Schoenbergian sonorities - the first being stacked as a tritone with a semitone stacked above it (Schoenberg would likely have stacked it as a P4 with a tritone above, thus creating a P4, a tritone and a M7), the next as a P4 with a semitone above (Schoenberg often stacked this as a tritone with a P4 above, which in set-theory is equivalent to the previous sonority). However, because of overtones, the actual transformed sound objects come out more complex - though they retain a sense of the atonal reference.
- These two iterations of Schoenbergian sonorities are followed by a repetition of the retrograde fragment returned to 93.75% slower. Over this a wind in prime (slowed 87.5%) slides downwards in time (to 93.75% slower than the fundamental prime), causing the pitch to also slide down an octave; this sound event is also coupled with echo effects.
- Two winds at different rates of acceleration lead to a sedimentary arrival, where three different winds, transformed in various ways, decelerate and rattle to silence, revealing the original recording of the snow globe being wound to surface, leading to the third variation.

V: Tempo Canon (Variation III)

- [2.10-2.31]
- The third variation features the original snow globe theme playing at four different speeds simultaneously: the fundamental, 100% faster, 300% faster and 700% faster (respectively, the latter three are the 2nd, 4th and 8th harmonics - all octave transpositions). Thus in the same amount of time, the 700% recording plays 8 times, the 300% 4 times and the 100% twice, all while the original recording plays once through unaltered. This is followed by a tag by the 100% recording.

VI: Microtonal Recapitulation

- [2.31-2.50]
- The original theme returns (minus being wound up), accompanied similar to the 1st variation. However, it soon loses energy, time and pitch, finally slowing to a detuned stop.

Prelude

- [2.50-3.00]
- There is ambience for approximately ten seconds; fireplace fades out to nothing.

**Krampus' Snowglobe:
Samples of functions & values used**

1st harmonic = fundamental
1st overtone = 2nd harmonic

Y = frequency of harmonic
X = Fundamental frequency (in hertz)
N = Harmonic # = Overtone # + 1

$Y = \{[n/(n-1)][n-1]\}X$
... which reduces to:
 $Y = xn$

Ratios between adjacent overtones:

(fundamental)
 $2/1 = 2$
 $3/2 = 1.5$
 $4/3 = 1.333...$
 $5/4 = 1.25$
 $6/5 = 1.2$
 $7/6 = 1.1666...$
 $8/7 = \text{complex number}$

Speed changes used:

50% faster yields a P5 higher (*3rd harmonic of 50% slower*)
100% faster yields an octave higher (*2nd harmonic = 1 overtone higher than fundamental*)
150% faster yields a M10 higher (*5th harmonic of 50% slower*)
300% faster yields 2 octaves higher (*4th harmonic = 3 overtones higher than fundamental*)
700% faster yields 3 octaves higher (*8th harmonic = 7 overtones higher than fundamental*)
1500% faster yields 4 octaves higher (*16th harmonic = 15 overtones higher than fundamental*)

50% slower yields an octave lower
75% slower yields 2 octaves lower
87.5% slower yields 3 octaves lower
93.75% slower yields 4 octaves lower
96.875% slower yields 5 octaves lower

Sound-gates: *This term is coined by Acadia composition graduate Carmen Braden, a term she uses to describe phrase ellipses (one sound covers the entry/activation of the next). Sound-gates are used throughout this study.*