

XII. The Drum Quartets

These three pieces, which are probably Tenney's most frequently performed ensemble works, were an outgrowth of the music he wrote for Stephan Von Huene's mechanical drum. The drum's construction and means of reading its "program" (encoded on large plastic disks) encouraged pieces with canonical and cumulative structures, and the three pieces Tenney wrote for it all have these structural traits in common. These three works for the drums are titled Wake, The Popcorn Effect, and Tempest, and are still to be heard regularly on the drum itself at the Exploratorium in San Francisco, where it now resides. Although I do not have access at present to the "scores" (large plastic disks) for these works, I can offer some general description (Von Huene's drum is described in more detail in the A.R.C. Edition of Michael Byron's Pieces I). Wake for the drum is almost identical to the setting for four tenor drums in the quartets, and will be described below. Tempest, besides having much in common with Hocket, is difficult for me to describe at present, not having the score. It is a study, like Hocket, in gradually evolving tempi, and in Tenney's own words,

"achieved within the mechanical constraints of the drum...i.e., everything was cyclic (once begun, a rhythm for a particular beater repeated exactly until it was turned off again). A gradually changing tempo could only be achieved by a kind of 'trick' (since the actual speed of the control mechanism for the drum was unchanging)...",

- the "trick", as in the bass drum setting involves consistently changing durations which suggest changing tempi.

Wake for Charles Ives is the first and best known of the Three Pieces for Drum Quartet. It has a certain appeal to professional percussionists, amateurs, handclappers and kitchen table beaters alike. Its rhythmic concept is so simple, yet its resultant structure so interesting, that it has almost a childlike wonder to it. It is at the same time clearly a memorial tribute to Ives, with its evocation of the ostinato snare drum material of the last movement of his Fourth Symphony (Example XII.1). The title itself is a typical Tenney double-entendre, for not only does it describe a joyous remembrance of a loved one but also the musical effect of the piece, whose rhythms move like ever accumulating waves, swells and breakers, with smaller echoes left in their wakes.

Example XII.2, an excerpt from the first page, shows the gradual accumulation of beats toward the full rhythmic

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Example XII.1



line in any given voice (here it is the first voice, the beginning of the piece). The complete phrase is two measures (eight beats) long, and each voice canonically repeats this accumulation in its respective entrance. No voice enters until the preceding voice has reached its full construction, and when a new voice enters it is displaced one beat behind the preceding voice, so that a complex pattern of waves, echoes, and gradual filling in of the rhythmic space is created in what very quickly becomes completely predictable. This predictability is quite exciting, and as I have explained above, is essential to Tenney's musical intent. Listening to each of the four drums enter one can play a kind of guessing game as to what the next "gestalt" will sound like. Example XII.3 shows the point of the piece where all four drums have finally grown to their full rhythm, and the "wake" is readily visible from the score. The next few measures end the piece, and Example XII.4 shows the final "wave", which is a slight alteration of the rhythmic process, resulting in a wonderfully powerful unison rhythmic climax.

Hocket for Henry Cowell is the only piece of Tenney's that I know of, (except for some of the computer pieces) which uses spatial location as a structural parameter (though I have also heard him conjecture in this regard about For Ann (rising), truly turning it into a "barber pole" piece). The four bass drums are placed around the audience, often creating some performance problems (being able to see and hear each other) and necessitates a conductor (though I have heard this piece performed without one).

The piece is in three main sections, each being canonical, and in some way a hocket. The first section consists of rolls which gradually "move" around the room by means of crescendo/descrescendo in adjacent drums. From the time that all four drums have entered, each one maintains its roll and the hocket illusion of circular movement is effected by a canon in dynamics. Tenney has long been interested, I believe, in the famous second movement of Ruth Crawford's String Quartet, in which only the dynamics change. (He has experimented with this further in a little-known piece entitled Canon for bass quartet, written just a little earlier than the drum quartets). The canon increases both in volume and in tempo, and then rather quickly softens at around measure 25, in anticipation of the next section, beginning at measure 28 with a single stroke (mezzoforte) of drum I.

Example XII.2

WAKE for Charles Ives
for four Tenor Drums

James Tenney
8/74

♩ = 60
p

mp

(mp)

mp

Note: Each system except the last is to be played through twice before proceeding to the next one; the notes with downward-pointing stems are to be played only at the end of the second time through a given system.

Example XII.3

Musical score for Example XII.3, consisting of four staves. The notation includes complex rhythmic patterns, primarily consisting of eighth and sixteenth notes, with some rests. The music is written in a key signature of one flat (B-flat) and a common time signature (C). The first staff begins with a dynamic marking of *(f)*. The score is organized into measures, with some measures containing multiple beams of notes.

Example XII.4

Musical score for Example XII.4, consisting of four staves. The notation includes complex rhythmic patterns, primarily consisting of eighth and sixteenth notes, with some rests. The music is written in a key signature of one flat (B-flat) and a common time signature (C). The first staff begins with a dynamic marking of *(f)*. The score is organized into measures, with some measures containing multiple beams of notes.

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The sections are dovetailed, or overlapped, as the other drums maintain the crescendo/decrescendo texture while underneath the roll-canon continues first in three voices, then in two, as they gradually move on to the new texture. The next section, from ms. 28 to ms. 49, is a kind of fragmentation, or incomplete (anticipation) version of the full rhythmic canon to follow, and gives a rather ungainly and

disjointed feel to the middle of this piece that is quite striking in performance. Obviously intentional, the musical and structural motivations for this section have always mystified me a little. We can find, of course, musical precedents for this "awkward" rhythmic feel in the stop/start motions of Blue Suede, Seeds, Quiet Fan, Viet Flakes, etc.. Each voice in this section gradually states some of the material of the following canon, three measures apart, but plays it for an abortive nine measures and then resumes the roll, also in canon with the other rolls. Thus, by measure 46, all drums are rolling once again, in rapid imitation. At measure 49, what is to become the complete canon begins. The leading voice of the canon is composed generally of successively shorter durations, as follows:

(in quarter notes) $7, 8+15/16, 5+35/48, 5+1/3, 3+1/2, 2+5/6...$
 Once again, the entrances are three measures (12 beats) apart. This leads to a resultant total rhythmic complex monophonic gestalt pattern of:

$7, 5, 3+7/8, 3+1/8, 2+2/3, 2+1/3, 1+7/8, 1+5/8, 1+1/2, 1+1/3, 1, ...$

(where durations are measured from one stroke to the next considering all four drums as one voice). Example XII.5 shows the exponentially decreasing curve that represents this duration series, the carefully planned result of the four voice canon. Slight pathologies in the curve arise from the approximations that were needed to transfer this curve from its original form in Tempest (where it could be realized rather accurately on the mechanical drum) to traditional rhythmic notation. The canon more or less ends at measure 61, cutting the series of the fourth voice short, and becomes a kind of study in hocket and accents, as shown in Example XII.6. Subsequently, the "tempo" is gradually decreased once again and at measure 70, begins to decay by augmentation into the main canonic material, over which the rolls are gradually superimposed. Measures 76 through 84 are a kind of mirror image of the introduction of the canon itself (ms. 49 -), with the voices entering into the roll canon from the top down. Note that in the score, this circular motion looks like a kind of "sawtooth" wave:

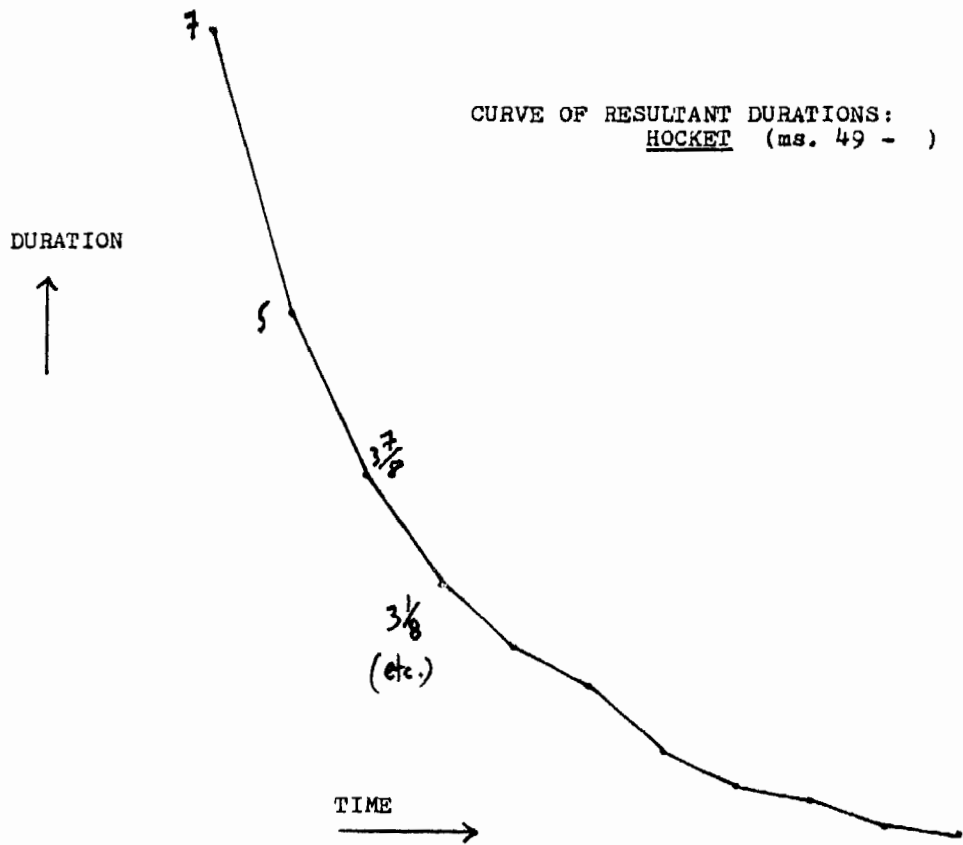


-the circular spatial effect caused by the immediate transference of the canonic material from voice 4 to voice 1 (which are adjacent in the room). At measure 89, a curious and beautiful thing happens in the score - the "sawtooth" changes to a "triangle" wave, and the spatial effect is that the canon alternates direction:



The similarity of this section to so much of Tenney's other music which utilizes the "swell" idea should not be

Example XII.5



Example XII.6

61

I

II

III

IV

(mf) cresc.

(mf) cresc.

(mf) cresc.

(mf) cresc.

64

I

II

III

IV



overlooked. The voices drop out, at triple piano, from the top down.

Hocket has a rather complicated arch structure. Measures 1-48 constitute the first section (rolls and aborted canon); measures 49-(approx.)73 the second, being the full statement of the canon with a hocket at the end; and measures 73 to the end being the inverse of the first section: first the aborted canon (or in this case the decay), and then the rolls. The idea once again is that the "swell" structure is replicated at several hierarchical levels, in both the durational and dynamic parameters.

Crystal Canon for Edgard Varèse is scored for four snare drums. The title of this third quartet puns on both the structure of the piece (the gradual cumulative nature in which the theme is built in the four voices resembles the formation of crystals), and on the fact that it is all based on the famous snare drum theme from Ionisation (Example XII.7 shows the full theme as it appears in Tenney). The quartet is in three sections, the first a canonic, gradual building up of the theme, with a little bit of the phrase added on each iteration. Unlike Wake, the four voices follow immediately, and build the phrase simultaneously, displaced a beat each (Example XII.8 shows one "sample" displacement). At measure 13, they begin the complete statement of the theme for the first time (still in canon). The second section of the piece begins at the end of measure 16

Example XII.7



Example XII.8

(though the fourth voice has a few beats to complete its statement), with an inverse of this process. With the snares off, and the rather distinctive idea of using a rim shot on the accent (dividing the theme more or less in half), the four voices in canon progressively state the theme in retrograde, shortening it each time. Each voice, after a few iterations, turns into a short ostinato, "out of phase" with the others, and while voices II and IV hold this, voices I and III commence the third and concluding section. It is similar to the first, except that the theme is built more quickly, with each voice adding its part, and each voice cumulatively including the increment of the previous voice. The first and third voices are spaced four beats apart, as in the beginning, and by the time the other two voices enter, the theme is nearly complete. The last few statements are shortened in successive voices (other than the first), so that they gradually come into alignment by measure 54, where the theme is stated once in unison (with a nice added touch in the final measure).

Crystal Canon is, along with Spectral CANON, Tenney's most extended and successful canonic study up to this point, and as such provides us with a glimpse into the way he would progress, especially with pieces like the string trio.