MODELED INDIVIDUALITY: THE INFLUENCE OF ELLIOT CARTER’S PIANO SONATA (1946) IN CARL VINE’S PIANO SONATA (1990)

BY

BENJAMIN BOREN

Submitted to the faculty of the Jacobs School of Music in partial fulfillment of the requirements for the degree, Doctor of Music
Indiana University
May, 2012
Accepted by the faculty of the Jacobs School of Music,
Indiana, University, in partial fulfillment of the
requirements for the degree Doctor of Music.

_______________________________________  
Andre Watts, Chairperson

_______________________________________  
Evelyne Brancart

_______________________________________  
Shigeo Neriki
# Table of Contents

List of Tables iv

List of Examples v

**Modeled Individuality: The Influence of Elliot Carter’s *Piano* 1**  
*Sonata (1946) In Carl Vine’s *Piano Sonata (1990)**

Bibliography 46
List of Tables

Table 1: Comparison of 2nd movement structure

Table 2: Metric Modulation in Vine Sonata’s 1st Movement

iv
## List of Examples

<table>
<thead>
<tr>
<th>Example</th>
<th>Piece Title (Year)</th>
<th>Movement</th>
<th>mm.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>1-15</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>297-301</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>64-65</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>20-21</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Carter Piano Sonata (1946)</td>
<td>2nd movement</td>
<td>68-70</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>156-160</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>282-289</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Carter Piano Sonata (1946)</td>
<td>2nd movement</td>
<td>102-121</td>
<td>11</td>
</tr>
<tr>
<td>9</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>206-219</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>194-203</td>
<td>13</td>
</tr>
<tr>
<td>11</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>312-317</td>
<td>14</td>
</tr>
<tr>
<td>12</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>102-104</td>
<td>15</td>
</tr>
<tr>
<td>13</td>
<td>Carter Piano Sonata (1946)</td>
<td>2nd movement</td>
<td>340-347</td>
<td>16</td>
</tr>
<tr>
<td>14</td>
<td>Vine Piano Sonata (1946)</td>
<td></td>
<td>27-46</td>
<td>17</td>
</tr>
<tr>
<td>15</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>278-293</td>
<td>18</td>
</tr>
<tr>
<td>16</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>18-22</td>
<td>22</td>
</tr>
<tr>
<td>17</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>47-52</td>
<td>22</td>
</tr>
<tr>
<td>18</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>79-80</td>
<td>22</td>
</tr>
<tr>
<td>19</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>172-174</td>
<td>23</td>
</tr>
<tr>
<td>20</td>
<td>Vine Piano Sonata (1990)</td>
<td></td>
<td>322-333</td>
<td>24</td>
</tr>
<tr>
<td>21</td>
<td>Carter Piano Sonata (1946)</td>
<td>2nd movement</td>
<td>351-357</td>
<td>25</td>
</tr>
<tr>
<td>22</td>
<td>Carter Piano Sonata (1946)</td>
<td>1st movement</td>
<td>32-50</td>
<td>27</td>
</tr>
<tr>
<td>23</td>
<td>Carter Piano Sonata (1946)</td>
<td>2nd movement</td>
<td>90-98</td>
<td>28</td>
</tr>
</tbody>
</table>
Example 24: Vine *Piano Sonata (1990)*, mm. 81-92

Example 25: Vine *Piano Sonata (1990)*, mm. 124-128

Example 26: Carter *Piano Sonata (1946)*, 1st movement, mm. 81-82

Example 27: Vine *Piano Sonata (1990)*, mm. 165-171

Example 28: Vine *Piano Sonata (1990)*, mm. 188-193

Example 29: Vine *Piano Sonata (1990)*, mm. 1-8

Example 30: Vine *Piano Sonata (1990)*, mm. 414-421

Example 31: Carter *Piano Sonata (1946)*, 1st movement, mm. 100-104

Example 32: Carter *Piano Sonata (1946)*, 1st movement, mm. 116-123

Example 33: Carter *Piano Sonata (1946)*, 2nd movement, mm. 24-36

Example 34: Carter *Piano Sonata (1946)*, 2nd movement, mm. 319-329

Example 35: Carter *Piano Sonata (1946)*, 1st movement, mm. 120-129

Example 36: Carter *Piano Sonata (1946)*, 2nd movement, mm. 388-392

Example 37: Carter *Piano Sonata (1946)*, 2nd movement, mm. 68-75

Example 38: Carter *Piano Sonata (1946)*, 2nd movement, mm. 84-86

Example 39: Carter *Piano Sonata (1946)*, 2nd movement, m. 339

Example 40: Vine *Piano Sonata (1990)*, m. 160
Elliot Carter’s Piano Sonata (1946) is generally considered one of the most important piano sonatas written in the 20th century. In addition to its success in concert halls, the piece is a compositional marvel. It contains an intricate cumulative structure, uses progressive rhythmic ideas, exploits the natural sound capabilities of the piano, and simultaneously honors the past with a large fugue in the second movement.

Likewise, Carl Vine’s Piano Sonata (1990) is one of only a few contemporary pieces to gain international acclaim and quickly become part of the standard piano repertory. It is attractive to performers and audiences alike because of its exciting passagework, beautiful harmonies, and driving momentum, and is considered by many to be the most important piano sonata written since Carter’s.

Vine’s Sonata, while being a strikingly original work, was heavily influenced by Carter’s Sonata. In his program notes for this work, Michael Harvey writes that the Piano Sonata “draws on the lithe beauty and contrapuntal elegance of the Elliot Carter Piano Sonata (1946),” and goes on to write that the works have similar two-movement schemes. While this statement is true, it understates the amount of actual influence, which extends to all aspects of the sonatas.

Despite all the similarities, Vine is not mimicking Carter; aurally, there is little aural resemblance between the pieces. Instead, he uses Carter’s ideas as a model, but

---

applies them in drastically different ways. This essay will discuss similarities in these
sonatas that show Carter’s influence on Vine, while also demonstrating the composers’
unique approaches to the same concepts. These will come from the broader categories of
overall structure, texture, rhythmic and metrical devices, and modern piano techniques.

The most obvious demonstration of Carter’s influence in the Vine Sonata lies in
the structure. On the surface, they have almost identical formats; two-movement,
cyclical forms with use of different tempi serving as structural pillars. In application,
they could not be more disparate.

Vine’s first movement is based on a building of speed and tension through metric
modulation (which will be discussed at length later). It flows organically from section to
section, often without transition, giving it the quality and format of a fantasia. The core
idea holding it together is perceived acceleration and constant accumulation of tension;
the tempo has an overall arch form, reaching its climax in m. 164 and then receding,
ending with the same calm as which it had begun. Vine changes tempo 8 times in this
movement, alternating between faster and slower each time except for the penultimate
change, which is also slower. The length of each section is generally consistent, changing
every 20-30 measures, with the last few slower sections changing at a proportionate rate
of 12-15 measures.

Compare this to Carter’s 9 tempo changes, which are an alternation between two
or three fixed tempi, as opposed to Vine’s arch form. The lengths of his sections vary
greatly, with several short sections at the beginning of the movement, and longer sections
thereafter. In contrast to Vine’s constant use of new material, this movement is defined
by a struggle between the slow introductory material and the fast *scorrevole* writing, as each is constantly interrupting the other throughout the movement.

The second movements, in contrast to the firsts, are virtually identical in structure. Both use an A-B-A\(^1\)-Coda format, with the Codas reprising the sonatas’ openings; however, their tempo schemes are completely opposite. Vine’s A-sections are fast, with a contrastingly slow B-section; Carter’s A-sections are slow, with an up-tempo B-section. Despite this, both composers produce very balanced sectional timings; in each, the A- and B-sections are very similar, with the Codas being less than half as long (Table 1).

**Table 1: Comparison of 2\(^{nd}\) movement structure**

<table>
<thead>
<tr>
<th>Section</th>
<th>Span</th>
<th>Length (in measures)</th>
<th>Timing(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>m.1-103</td>
<td>103</td>
<td>4:42</td>
</tr>
<tr>
<td>B</td>
<td>m.104-329</td>
<td>225</td>
<td>3:56</td>
</tr>
<tr>
<td>A(^1)</td>
<td>m.330-392</td>
<td>62</td>
<td>4:19</td>
</tr>
<tr>
<td>CODA</td>
<td>m.393-414</td>
<td>21</td>
<td>2:04</td>
</tr>
</tbody>
</table>

**Carter Sonata 2\(^{nd}\) movement**

<table>
<thead>
<tr>
<th>Section</th>
<th>Span</th>
<th>Length</th>
<th>Timing(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Vine Sonata 2\(^{nd}\) movement**

2 Timing taken from *Elliot Carter: The Minotaur; Piano Sonata; Two Songs*. Nonesuch, 1992 (performed by Gilbert Kalish)

The codas, by bringing back opening material, give each sonata a cyclical form. Compositionally, in Vine’s Sonata, which is mostly through-composed, it seems to be the result of having come full-circle; the journey has led us back to where we started. For Carter’s Sonata, it is the culmination of a large-scale master plan that unfolds throughout the work. The groundwork is laid out in the first few measures, and is then re-used, varied, and developed in the rest of the piece. According to the composer’s notes⁴, the main material comes from five short ideas in the opening measures (Ex. 1).

The first idea is a half-step motion in the bass, occurring twice in the opening 15 measures, from B (m. 1) to A# (m. 4) and back to B (m. 7). It occurs again in mm. 9-15. Robert Below considers these two notes to function as tonic and dominant, as there is no functional harmony in this piece⁵. This motive is especially important because it also outlines the harmonic movement of the entire sonata. The first movement begins with a B in the bass and ends with a B-flat (A#), and then returns to B by the end of the sonata. The half-step relationship is very important, and while B to A# (B-flat) occurs throughout the piece, other half-step relationships such as F# to F are used as well, as at the end of

<table>
<thead>
<tr>
<th></th>
<th>m.194-279</th>
<th>85</th>
<th>2:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>m.280-309</td>
<td>29</td>
<td>2:04</td>
</tr>
<tr>
<td>B</td>
<td>m.310-415</td>
<td>105</td>
<td>2:44</td>
</tr>
<tr>
<td>CODA</td>
<td>m.416-421</td>
<td>5</td>
<td>0:50</td>
</tr>
</tbody>
</table>


the first movement, mm. 297-301 (Ex. 2).

Example 1: Carter *Piano Sonata (1946)*, mm. 1-15

Example 2: Carter *Piano Sonata (1946)*, 1st movement, mm. 297-301

The second idea is the theme in thirds followed by an octave leap down, seen in the right-
hand (RH) in mm. 2-3. This is repeated throughout the work, even occurring in harmonics near the end of the sonata (Carter’s use of harmonics as a pianistic device will be discussed at length later). Below has his own take on this idea, considering it as only the top notes of the motive, which consist of a half-step up, an octave leap down, and then a upward leap of a fifth or more\textsuperscript{6}. This revised motive occurs twice more in the opening measures, in mm. 5-7 and in mm. 9-10 (minus the initial half-step).

The third idea is the sixteenth note arpeggations in m. 3. A major source for much of the scorrevole material, it binds most of the first movement together. Because it is confined to the first movement, it is not considered part of the cyclical structure.

The fourth idea is the motive A\#-A\#-G\#, seen in mm. 12-13. This idea is seen throughout the sonata, in fast scorrevole sections in the first movement, as well as in the second movement, transposed down a step to A and G (Ex. 3).

Example 3: Carter Piano Sonata (1946), 1\textsuperscript{st} movement, mm. 64-65

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{example3.png}
\caption{Example 3: Carter Piano Sonata (1946), 1\textsuperscript{st} movement, mm. 64-65}
\end{figure}

The fifth and final idea is the ascending octaves found at the end of the first scorrevole section, mm. 20-21 (Ex. 4). These are found in many other places in the first movement, as well as in the second movement, mm. 68-70 (Ex. 5), and so are part of the cyclical

\textsuperscript{6} Ibid, 288
structure, even though they do not appear with the other motives in the opening section.

Even though these motives are responsible for the sonata’s cumulative structure, they are largely esoteric to listeners, who will be unlikely to notice them without a handout and a pre-performance speech. Because of this, the effect of both

Example 4: Carter Piano Sonata (1946), 1st movement, mm. 20-21

Example 5: Carter Piano Sonata (1946), 2nd movement, mm. 68-70

composers’ cyclical form will be similar for general audiences, despite their vastly different approaches. The overall structure, while perhaps being the most obvious source of influence from Carter to Vine, is mostly superficial. The use of certain compositional techniques, ideas in texture, rhythm, and meter, indicate a more sophisticated and substantial influence.
The changes in speed that demarcate the structure are also accompanied by major textual changes in both sonatas. Carter’s speed changes tend to correspond with certain textures; most slow sections are based around the natural decay of sound (an idea discussed later in this essay), as in the opening of each movement. The fast sections, such as the scorrevole and the fugue, are contrapuntal. For Vine, the correlation between speed and textural style is less distinct; he uses both contrapuntal and layered textures in both fast and slow sections.

The abundant use of similar textural devices comprises the second major area of Carter’s influence on Vine; the main devices common to both sonatas include contrapuntal and layered textures. Both have a modern contrapuntal approach, using unresolved dissonances as much as consonances; Carter, because of the fugue, has more of a link to the old tradition. Both also use layered textures of three or more voices, where all voices are more or less equal in importance, and where each voice is not particularly melodic on its own. However, both composers write in a variety of styles within each category, with several passages that are quite similar.

Carter’s ideas on texture evolved throughout his life, with the Piano Sonata representing methods later abandoned:

“... at a certain point I decided that the traditional categories, like ‘theme and accompaniment’ or ‘subject and countersubject’ really didn’t deal with what began to seem to me the vast spectrum of kinds of relationship that the contributory vertical elements in the musical continuity can have with each other in respect of the past and future of a piece. . .”\(^7\)

Carter wrote his Sonata before he fully embraced these ideas; he had studied counterpoint under Nadia Boulanger for three years (1932-35), and proves his mastery of the style in this sonata. Much of the material in the first movement is contrapuntal, and a large fugue takes up most of the second movement; his style varies by section. Three examples are mm. 156-160 in the first movement (Ex. 6), mm. 282-289 in the first movement (Ex. 7), and mm. 104-121 in the second movement (Ex. 8).

Example 6: Carter Piano Sonata (1946), 1st movement, mm. 156-160

In Ex. 6, Carter partially adheres to traditional 18th-century rules in this third species (4:1 note ratio) example by using consonances on most vertical intervals; however, the linear progressions are non-functional.

Example 7 uses first-species counterpoint (1:1 note ratio), and is based around parallel, similar, and contrary motion with sixteenths in both hands. This is a very exciting piano texture that maximizes the sense of speed and momentum, while also sounding extremely difficult. It starts with the voices in octave unison and parallel motion, and then they split apart in m. 283. The voices follow similar contours.
throughout the remainder of the excerpt, sometimes in parallel motion, sometimes in contrary motion, but this section does not use the consonances of the previous excerpt. They begin in m. 283 a fifth apart, and then move away, by the end of the measure they are in parallel motion a major seventh apart. Measure 287 uses the same notes in each voice, but the first beat is in contrary motion and the second beat begins in parallel motion and switches to contrary. The section moves away from note-against-note writing in m. 290, and finally reaches a consonance, an F# major chord, at m. 297 (see Ex. 2).

Example 7: Carter Piano Sonata (1946), 1st movement, mm. 282-289
Example 8 shows the opening of the second movement fugue. The subject, starting in m. 103 on Eb, begins with an upward leap of a fifth (Bb), lands a tenth above (G) in m. 105, and finally reaches its peak two octaves above the starting note in m. 108, before descending back down to the original Eb in m. 112. It is full of leaps – fourth, fifths, and sixths – and often outlines major triads along the way, such as in m. 106 and m. 109. An equally leapy countersubject is confined to a more limited range. Rhythmically complimentary to the answer, it does not outline as many triads as the subject, but sometimes creates traditional harmonies through suspensions; for example, the downbeat of m. 114 resolves after three beats to an A-flat major harmony.

Example 8: Carter Piano Sonata (1946), 2nd movement, mm. 102-121
Vine’s counterpoint also tends to be leapy and dissonant. He will often use a mixture of counterpoint and ostinato, where the RH is contrapuntal against an elaborate, constantly evolving left-hand (LH) ostinato. A good example of this is at the beginning of the second movement, mm. 206-219 (Ex. 9).

In this section, the LH has three different ostinato patterns, beginning in m. 206, m. 210, and m. 214. The first two patterns are only one measure long, and the RH’s pattern against it is two measures long. From m. 214-219, the LH switches to a

Example 9: Vine Piano Sonata (1990), mm. 206-219
two-measure pattern, matching the RH’s two-measure pattern. The RH notes are mostly consonances against their simultaneous LH counterparts. Similar to the Carter example (Ex. 7), Vine has similar contours between the hands starting in m. 210.

Example 10: Vine *Piano Sonata (1990)*, mm. 194-203
Vine uses voices in unison parallel motion a great deal in the second movement; the first ten measures (mm. 194-203, Ex. 10) are in this format, using a variety of contours and leaps. This resembles Carter example from Ex. 6, as well as Carter’s other sections in parallel motion from his sonata, such as at the very end of the first movement (see Ex. 2). Vine’s use is far more extensive, with more than 20 measures of unison in the second movement. Later in the movement, mm. 310-317 (Ex. 11), when the opening material is recapitulated, he begins again in unison, and then splits off at the interval of a tenth. Unlike Carter’s split off, he maintains this interval throughout the rest of the section.

**Example 11: **Vine *Piano Sonata (1990)*, mm. 312-317

As with counterpoint, Vine’s use of layered textures is usually more extended than Carter’s, who tends to use them in shorter segments. Two examples from Carter’s
Sonata are mm. 102-104 in the first movement and mm. 341-347 in the second movement. From Vine’s Sonata, mm. 30-38 and mm. 288-297.

In the first movement of Carter’s Sonata, mm. 102-104 (Ex. 12), the composer uses three staves, with multiple voices on each of the upper two. The lowest voice is the triple-C’s on the bottom stave; the two C’s in each of the upper staves are a late arriving extension of the sonority. This excerpt compiles several previously occurring motives, and condenses them into a three-measure span.

Measures 341-347 (Ex. 13) in the second movement contain three voices; the outer voices have a similar contour, while a more independent middle voice rings out against them. Carter gives this voice a louder dynamic (mf), and accents to help distinguish it from the other voices.

Example 12: Carter Piano Sonata (1946), 1st movement, mm. 102-104

Example 13: Carter Piano Sonata (1946), 2nd movement, mm. 340-347
Vine’s Sonata has a very similar section, although more prolonged, in the early moments of the first movement. Measures 30-46 (Ex. 14) are the first layered section of Vine’s sonata. As in the Carter excerpt, there are three voices. The lower two voices are linked; the middle voice, found as upward-stemmed notes in the bass-clef, is a falling three-note pattern (Db – C – Bb), and is syncopated between the straight quarter-note rhythm of the low voice. These voices form a two-measure ostinato pattern, switching in m. 38 to new harmonies but keeping the same pattern.

A second switch occurs in m. 42; here, there is a change in harmony again for both voices, and the pattern changes slightly for the low voice. The high voice is the only through-composed voice in this section, but despite this, it is not very melodic on its own. The main interest of this section is the density of the texture with three different rhythmic patterns occurring simultaneously and the gradual build of the overall dynamic to **ff** in m. 46.
Example 14: Vine Piano Sonata (1946), mm. 27-46

Example 15: Vine Piano Sonata (1990), mm. 278-293
The B-section of Vine Sonata’s second movement, mm. 280-297 (Ex. 15), take
the layered effect one step further than any of the other examples; here, there are three
very distinct voices, comprised of a drone in the lowest register, an improvisatory line in
the middle register, and bell-like cluster chords in the highest register. The section begins
with just the outer voices, which are joined in m. 288 by a recitative style middle voice.
Extending all the way to m. 308, this is by far the longest layered section in either
composer’s sonata, spanning almost 30 measures and lasting approximately 2 minutes.
As with textural devices, Vine utilizes many of the same conceptual rhythmic and metrical devices as Carter; again, he often extends the ideas further than his predecessor, writing in a denser and more complex style. The most important idea Vine takes from Carter is metric modulation, rhythmical influences include the use of complex cross-rhythms and the use of constantly changing note-groupings. An interesting distinction with these devices is the composers’ motivation for using each one.

Metric modulation can be defined as a change in meter, in which a note value from the preceding meter becomes equivalent to a note value (usually different) in the new meter. For example, in a meter change from 3/8 to 4/4, the speed of the quarter note in the new meter can be made equivalent in speed to the eighth note from the former meter. In this way, the basic pulse never changes, but the music slides into a new beat structure, creating either a faster or slower feel. The term metric modulation, first used in 1951 by Goldman in the Musical Quarterly to describe Carter’s rhythmic practices, was an idea formed by Carter as a way of evolving rhythms and rhythmic continuities, and was ironed out during the composition of his Cello Sonata (1948). The term itself is ironic, since Carter was actually looking to create music that existed in a realm without regular meter, that is, to write music where the pulse does not come in the expected strong-weak patterns (such as on beat 1 in 3/4, or on beats 1 and 3 in 4/4). He sought to break down this metric tendency through the use of multiple musical voices whose pulse patterns rarely coincided. Instead of writing two voices with a 2/1 or 3/2 beat ratio, where the strong pulses would line up frequently, he used a 15/8 or 21/20 ratio. Metric modulation was then used to prevent the beat patterns from lining up, resetting and

---

mixing the ratios just before they would coincide, so that the music never had matching strong pulses. Because he was looking to break down the typical metrical patterns, Carter used the term Tempo (or Temporal) Modulation for this concept. Carter’s piano sonata does not actually use metric modulation, but because Vine makes extensive use of it in the first movement of his sonata, it is included in this essay.

Unlike Carter, Vine is not looking to suspend meter, but instead to enhance it, using the modulations to build an arch form of speed and momentum throughout the movement. Vine’s first movement is 193 measures long, with the first 160 measures constituting a build of tempo and tension through metric modulation. It already reaches its top speed in m. 80, where a small A-B-A section ensues; the tension relaxes for 33 measures in the B-section from mm. 105-147 with a slower rhythmic section, and then returns to the A-section, reaching the movement’s climax at m. 160. Afterwards, the tempo slows through the remainder of the movement. The following table (Table 2) shows the evolution of meter and speed throughout the movement.

Table 2: Metric Modulation in Vine Sonata’s 1st Movement

<table>
<thead>
<tr>
<th>Measure</th>
<th>Meter</th>
<th>Speed</th>
<th>Modulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4/2</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>4/2</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>6/4</td>
<td>144</td>
<td>Half = Dotted Half</td>
</tr>
<tr>
<td>24</td>
<td>5/4</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>12/16</td>
<td>144</td>
<td>Quarter = Dotted-Eighth</td>
</tr>
<tr>
<td>52</td>
<td>4/4</td>
<td>108</td>
<td>Sixteenth = Sixteenth</td>
</tr>
</tbody>
</table>
As the chart shows, there are five modulations, the last occurring at m. 80. At m. 20, the half-note from 4/2 modulates to equal the new dotted half-note in 6/4. The new pulse, however, is in the quarter-notes, so the quarter-notes in the LH triplets from mm. 13-19 stay the same speed and become the main pulse (Ex. 16). The next two changes are in close succession; at m. 50 the quarter-note modulates to equal the dotted eighth-note in 12/16 meter, and then in m. 52 the sixteenth-notes modulate to equal sixteenth-notes in 4/4 meter, which drops the speed down to 108 (Ex. 17). At m. 73, the meter modulates back into 12/16, with the sixteenth-note remaining equal, bumping the speed back up to 144. Then, in the final modulation at m. 80, the dotted eighth-note modulates to equal quarter-notes in 4/4 time, keeping the overall pulse at 144 (Ex. 18).

All tempi used are divisible into 144, with the exception of the final speed of 60. Even though the maximum speed of 144 is already reached by m. 20, Vine’s clever use of metric modulation, dynamics, and different cross-rhythms hold off the climax until m. 148.
Example 16: Vine *Piano Sonata (1990)*, mm. 18-22

Example 17: Vine *Piano Sonata (1990)*, mm. 47-52

Example 18: Vine *Piano Sonata (1990)*, mm. 79-80
Complex cross-rhythms are in constant use in both sonatas; Carter uses them less frequently than Vine, but both switch often between 2:3, 3:4, and other ratios. Neither composer keeps to one pattern for very long, they may switch several times within the same measure. Vine’s Sonata, in contrast to Carter’s Sonata, uses cross-rhythms continually; it is actually difficult to find sections, or even measures, that do not contain them.

Example 19: Vine Piano Sonata (1990), mm. 172-174

The quintessential example of Vine’s use of cross-rhythms is between mm. 173-187 in the first movement (Ex. 19). In this section, the meter is 4/2, and the left hand is using quarter-note triplets while the right hand is essentially in 8/4. The rhythmic difficulty is that the right hand is constantly changing, using all kinds of groupings – eighth notes, sixteenths, thirty-seconds, sextuplets, etc. – and it should be lining up against the left hand triplets. Despite the exact notation, the section has an improvisational feel to it.
Another example is in the second movement, mm. 322-333 (Ex. 20). In this section, the cross-rhythms change every two measures, and Vine uses three different
meters: 4/4, 3/4, and 12/16. Measures 324-325 combine cross-rhythms with layering; the RH is in sextuplets, and the LH has two patterns; a standard grouping of four in the bass, and double-stemmed notes for the thumb occurring every three sixteenths. This LH pattern continues through the rest of the example, first as syncopation, then becoming the main beat pattern in m. 327 when the meter changes to 12/16. The clarity of most of these cross-rhythms will be lost in the speed and density of this passage; like a fugue, there is almost too much occurring simultaneous to be able to bring out each individual voice. In this case, Vine is using them to create a wash of sonority, rather than creating a texture than can be clearly understood by an audience.

Example 21: Carter *Piano Sonata (1946)*, 2nd movement, mm. 351-357
In the Carter Sonata’s 2nd movement, mm. 351-357 (Ex. 21) illustrate similar cross-rhythm use, although it is not quite as intense as Vine’s. It is a condensed mixture of the two Vine examples, with each hand shifting almost every beat between duples, triplets, and sixteenths. Generally, Carter uses fewer voices than Vine, so while his cross-rhythms are not as intricate, they are more discernible to the listener.

Carter and Vine’s approaches to manipulations of note-groupings also differ greatly, both in form and philosophy, even though they are essentially going for the same effect. Carter’s groups stem from an avoidance of meter, while Vine’s are created out of a strict adherence to the meter.

In the first movement of his Sonata, Carter is well on his way to writing music without meter. Already, at the beginning (see Ex. 1), there is no time signature, although we can deduce that it is 3/2, and then switches to 2/2 for mm. 5-7, and then back to 3/2 until m. 12. The ensuing scorrevole is almost in 4/4, but not quite; some measures, like m. 16 and m. 19, are much shorter, and m. 19 only has 10 sixteenth notes. He is extremely free with the meter; his publisher even suggested that he remove the measure lines completely10, but thankfully Carter left them in for clarity. As a result of this kind of writing, the first movement is full of sections like mm. 33-50 (Ex. 22), where multiple kinds of sixteenth-note groupings occur.

Example 22: Carter Piano Sonata (1946), 1st movement, mm. 32-50

---

Measure 33 has a group of four, two, then three (in the top voice), m. 34 has groupings of four, three, and six. Measure 43 has a string of 18 sixteenths in a row, the first note being tied and the last one is a pickup for the next measure. These sixteenth notes are all to be played at the same speed; because there is no pulse, the groupings of 3
are not triplets compared to the groups of 4, but rather are all equal. There is no overriding beat structure. Despite this, the listener can pick up on the different groupings, so I believe that Carter wrote the groupings in this fashion so it would be easier to read, and because the contour is such that the groupings will be brought out naturally. Another short example of this is at the very end of the first movement (mm. 300-301, see Ex. 2), where Carter divides the 14 total sixteenth notes into groups of four, four, three, and two.

Example 23: Carter Piano Sonata (1946), 2nd movement, mm. 90-98

The second movement, in stark contrast to the first, uses time signatures, but they change every few measures; in the 14-measure span between mm. 11-25 there are 12 changes of meter. This is reminiscent of Copland’s style, and even within the designated meters, Carter is using irregular and constantly changing groupings. Consider measures 90-98 (Ex. 23), a nine-measure span where the meter changes six times. Typical grouping patterns for 8/8 are generally some sort of two’s or three’s plus two’s. In each case, Carter uses five plus three. Also, the 9/8 measure (m. 96) uses groupings of five plus four, instead of more traditional groups of three’s.
Example 24: Vine Piano Sonata (1990), mm. 81-92

Vine’s use of groupings take on a slightly different format; instead of constantly changing the meter and varying the group lengths, he keeps the music in regular metric patterns and uses accents and pattern contour to make groups. The best example of this is in the first movement, mm. 81-91 (Ex. 24). In m. 81, Vine uses accents to create groups
of three, three, three, two and four. In m. 82, the contour dictates that you will hear a group of four (or two groups of two), followed by four groups of three. The accents also emphasize the syncopation created by the sixteenth rest at the beginning of most measures, and create a hint of a melodic line. As in the Carter, the music’s contour makes the groupings audible, but Vine is barring together traditional metrical groups of four’s.

Another example is mm. 124-128 (Ex. 25), where Vine again uses accents to create groupings. Notice that in m. 126, Vine bars together standard groupings of four plus four, and uses accents to make new groupings of three, three, and two.

It is interesting to note that Vine’s groupings always exist within each measure, and then reset on the downbeats. If different groupings are required, then the meter is changed to accommodate it. Also, his groupings tend to take on an almost layered effect, with melodies or motives emerging from them, giving the notes within them a hierarchy of importance. In the Carter examples, the notes involved are more melodic, with each one being of equal importance within the grouping and within the overall phrase.

Example 25: Vine *Piano Sonata (1990)*, mm. 124-128

A distinctive feature of these works among the piano literature is that they were written expressly for the piano and its unique capabilities; in this respect, both composers...
use the instrument to its fullest potential. Carter’s influence is clearly at work here as well, with Vine using many of the same modern piano techniques as his predecessor. Elements common to both pieces include the use of what I will call “appearing chords,” and the use of the middle pedal. In addition, the composers incorporate their own unique features to the sonatas; Carter explores the piano’s capabilities in sound production by generating specific overtones and harmonics, and by making the natural decay of the piano’s sound a major thematic motive, Vine employs the use of glissandi and cluster chords.

Example 26: Carter Piano Sonata (1946), 1st movement, mm. 81-82

A purely pianistic device used in both Sonatas is the “appearing” chord, where a chord literally seems to appear out of a jumble of notes. In actuality, the notes for the chords are being played and held down during the jumble, and then their strings are left ringing once the other notes are let go. Carter first does this in m. 81 of the first movement (Ex. 26). Here, the notes for the appearing chord are played in the left hand, with the right hand playing notes that are a half-step above (with the exception of the D-flat) and in alternation with the LH. The RH notes are not held down, and so all that is left is a G major chord. After this, Carter uses the chord multiple times; in the nine-measure span from 108-116, he uses it four times.
Example 27: Vine *Piano Sonata (1990)*, mm. 165-171

Example 28: Vine *Piano Sonata (1990)*, mm. 188-193
Vine has two small spurts of appearing chords; the first is from mm. 164-170 (Ex. 27), the second is from mm. 188-193 (Ex. 28). Whereas Carter always alternates the notes between the hands, with one hand holding the chord, Vine will sometimes have similar parallel motion between the hands, such as in mm. 167-168. Vine also tends to have the appearing chord in the right hand (nine chords in RH, only one in LH), as opposed to Carter’s more equal treatment (three to the LH, two to the RH). Vine also has more instances of the chords in his spurts, he has seven in the first six-measure section, and three in the last six measures. The last group features accents on the LH notes, giving them temporary prominence before giving way, a feature that Carter’s chords do not have. Vine extends the idea of the appearing chord in this section by having two chords played simultaneously, with one chord accented, but released quickly, and the other held, such as in m. 189 and mm. 190-191 (Ex. 28). Its effect is more direct; instead of a chord appearing from a jumble, the full chord is already there, and transforms from the first sonority into the remaining sonority instantly. The ear is drawn to the top notes of the chords, and it sounds almost like the pitch is bending from one note to the other, like a violin slide.

The middle pedal’s main purpose is sustaining a pedal point without interfering with other voices, either to allow the damper to be changed without losing the bass, or so the bass can be held without using the damper at all. Generally, this involves writing where the performer needs both hands in other areas of the keyboard. Vine and Carter each use the middle pedal multiple times throughout their Sonatas.

Vine begins and ends his Sonata with the middle pedal. Before the performer begins, he must silently press down five notes (Ex. 29) and catch them in the middle
pedal. The notes (A-C-E-G-B) are then played as three different fifths (A-E, C-G, E-B) throughout the first 13 measures. Each fifth is played twice before switching to the next. In addition to creating a stir in the audience (who generally don’t realize what’s going on), this makes the opening a little easier; the performer doesn’t have to worry about switching to the other fifths in the middle of the passage, and allows him to clear the damper at will. In addition, having all five notes down allows those notes and their overtones to keep ringing throughout the entire passage, even when the damper is changed, creating a richer sound than if only two notes were held.

Example 29: Vine Piano Sonata (1990), mm. 1-8

When the opening material returns at the very end of the Sonata, mm. 416-421 (Ex. 30), Vine again catches low notes in the middle pedal. This time, there is no time or need to depress the notes in advance, and the sonorities are changed to an octave plus a fifth in the middle (Bb-F-Bb in m. 416). The combined last chord between the hands in m. 420 stacks up three consecutive fifths, A-E-B-F#, in a spread out version of the opening’s fifths.
Example 30: Vine *Piano Sonata (1990)*, mm. 414-421

Vine’s second occurrence of the middle pedal is in m. 171 (see Ex. 27), where the C# is sustained in the middle register. It is only held for one measure, and is played quietly. Two measures later, from mm. 173-187 (see Ex. 19); Vine again uses the middle pedal for bassnotes. Reminiscent of the opening, Vine catches three different fifths in the bass, playing each one twice before switching to the next. The switches occur in regular intervals of two measures.

In the slow section of the second movement, mm. 280-309 (seen in Ex. 15), Vine uses the middle pedal to sustain a low drone in the bass. Eventually this section expands to having three voices, and so the damper must be used to help keep the sound from getting muddled. Like Vine’s other sections, the bass changes multiple times over the course of the section, beginning with a B-flat in m. 280, switching to E-flat in m. 304, to D in m. 306, and finally to A in m. 308. Again, the switches occur every two measures.

Carter’s first use of the middle pedal occurs in the first movement, mm. 100-104
(Ex. 31). The G in m. 101 is caught first; the switch to the C’s must be caught before continuing in m. 102. Here, little to no pedal is needed in m. 101, and then the damper is changed often in mm. 102-104, in order to hear the layered voices. A few measures later, in mm. 116-123 (Ex. 32), the middle pedal is down again, this time to hold a B-major chord while both hands play above it. Before this, in mm. 109-115, there are two instances of held chords such as this where Carter does not use the middle pedal. There, the other notes could be played with one hand; here, they cannot. Also, this section warrants very little use of the damper pedal.

Example 31: Carter Piano Sonata (1946), 1st movement, mm. 100-104

Example 32: Carter Piano Sonata (1946), 1st movement, mm. 116-123
In a unique passage, mm. 25-33 (Ex. 33) of the second movement, Carter uses the middle pedal to hold an E-flat in the middle register. The note must be struck quite hard for the sound to last the entire nine measures; notes in this register do not sustain as well as in the bass, and are much harder to hear clearly against the other voices. Carter’s last occurring use of the middle pedal is in mm. 319-329 (Ex. 34) of the second movement, in the climax of the fugue. This three-staved section has double octaves held in the middle pedal, with octaves in the upper staves.

Despite using the middle pedal for the same purposes, the composers have extremely different styles. Vine uses it primarily in quiet sections, Carter in loud sections. Vine’s sections are generally long (12, 15, and 30 measures), Carter’s short (4, 4, 9, and 11 measures). Carter never has the notes re-struck once caught in the middle pedal, Vine almost always does. And within the sections, Vine always switches the notes being held, usually multiple times per section; Carter switches in only one example, with just one change (mm. 101-104).

In addition to using the middle pedal for traditional purposes, Carter also employs it to help create specific overtones and harmonics throughout his Sonata. The piano’s overtones are usually experienced as a general effect. However, it is possible to isolate
them on certain pitches by depressing the key of the desired overtone, or by catching them in the middle pedal, raising only their respective dampers and eliminating the cumulative sound. Harmonics are generated in a similar fashion.

**Example 33**: Carter Piano Sonata (1946), 2nd movement, mm. 24-36

![Example 33: Carter Piano Sonata (1946), 2nd movement, mm. 24-36](image1)

**Example 34**: Carter Piano Sonata (1946), 2nd movement, mm. 319-329

![Example 34: Carter Piano Sonata (1946), 2nd movement, mm. 319-329](image2)
This first happens in mm. 124-128 of the first movement (Ex. 35). Carter calls for C and E-flat to be silently depressed and caught in the middle pedal. The loud thirds in the left hand activate both depressed notes, as well as specific harmonics above them, which Carter has bracketed in the score. The harmonics are usually barely audible, so in hopes of hearing them, there are no other notes in the texture. This same figuration happens again at the end of the second movement, in mm. 388-392 (Ex. 36).

Example 35: Carter Piano Sonata (1946), 1st movement, mm. 120-129

Example 36: Carter Piano Sonata (1946), 2nd movement, mm. 388-392
The second movement has three occurrences of silently depressed notes: mm. 68-81, mm. 84-87, and mm. 339-340 (Ex. 37-39). In each case, loud, accented bass notes activate the depressed notes, causing them to ring quite clearly. Of these, only mm. 339-340 employs the middle pedal.

Example 37: Carter Piano Sonata (1946), 2\textsuperscript{nd} movement, mm. 68-75

Example 38: Carter Piano Sonata (1946), 2\textsuperscript{nd} movement, mm. 84-86

Example 39: Carter Piano Sonata (1946), 2\textsuperscript{nd} movement, m. 339
Carter is not only interested in how sound is produced on a piano, but also how it deteriorates. The piano’s natural sound decay is a central thematic motive in his Sonata, with multiple sections dedicated to the idea. By having notes held for rather long periods of time, such as ten beats or more, without pedal, the decay can be heard clearly. In the opening moments of the first movement (see Ex. 1) Carter holds the octave B in the second measure for ten beats. The ensuing third in the RH (m. 4) is held for six beats, and the LH octave A#, also in m. 4, is held for ten and a half beats. Resonance of a multi-register chord occurs in mm. 10-11 and mm. 13-14, with the LH arpeggiation occurring only after a considerable length of time and noticeable decay of sound. This effect requires that the performer not use pedal, otherwise the held notes would not decay at a natural rate, with each pedal release the notes would lose some of their ring. The result is a very dry, sparse sound; it also makes the listener very aware of the passage of time, allows the music to sound unmetered and free, and enables the listener to focus in on the decay of the resonance. It is a marked contrast to the scorrevole sections, which have a busy, dense contrapuntal texture.

Later in the first movement, we can see more instances of decay, particularly in the “appearing chord” sections, mentioned earlier. Once they “appear,” the chords are generally held for long periods of at least a measure, sometimes more. The second movement’s slow beginning also uses this idea. There are a few times when Carter specifically calls for pedal in this type of section, in the second movement mm. 52-53, and in the last seven measures of the sonata. The latter is simply a matter of making the sound last as long as possible.

Vine’s Sonata also contains unique elements not present in the Carter Sonata. In
m. 104 and m. 160 (Ex. 40), Vine makes use of two piano effects, a glissando and a cluster-chord. Neither are new techniques nor exclusive to pianos, but they are not so common in classical repertoire, and certainly would rarely appear in the same measure. The glissando has a range of five octaves, from G2 to F7, and ends with an enormous cluster, to be played by the LH forearm and hand, consisting of all the black notes between G-flat5 and A-flat7. Besides being a fun and startling effect, this combination brings the music to an abrupt halt, serving as a transition to other sections. Vine uses cluster chords twice more in the Sonata, both times near the end of the second movement, although they don’t require use of the forearm.

Example 40: Vine Piano Sonata (1990), m. 160

An interesting thing to note about both composers’ use of modern piano techniques is that they don’t require any special use of the piano. The performers are not required to stick their hands inside the piano and pluck actual strings, are not required to use props of any kind, and are not required to prepare the piano in any way. All of these techniques can be done within the normal confines of playing, and so the pieces can be played by any performer on any piano.
In conclusion, it is important to understand that this essay is referring only to ideas within these specific sonatas (with the exception of metric modulation), and not to the composers’ overall compositional styles. Both composers have evolved compositionally throughout their careers, these are early pieces in their respective canons. Carter’s harmonic, textural, and rhythmic styles presented in this sonata were completely abandoned in his later works in favor of his evolving thought processes, and this sonata is not considered to be a good representation of him, but rather an early work from a time before he found his own truly unique style.

Vine, at the present time, has written two more piano sonatas, each with its own unique structure and style, and none of them can be linked to Carter or another composer the way this one can.

Most of the ideas presented in this essay are neither unique nor new to the piano repertoire; Carter and Vine are certainly not the first to use cross-rhythms, layered textures, counterpoint, or the middle-pedal in their works. The “modeled individuality” of Vine’s sonata from Carter’s is in the predominance of the latter’s ideas within the former’s; ideas such as the demarcation of sections by a change in both tempo and texture, complex layered textures, and complex crow-rhythms have also become hallmarks of Vine’s style.

Both sonatas have been tremendously successful, despite their different scopes. Carter’s sonata and its construction were aimed at a compositional ideal, a grand cumulative form derived from motives presented at the beginning. In this sense, it is

---

even more appealing to theorists than to performers, and its place in history is based more on its compositional genius rather than its success in concert halls. In contrast, Vine wrote his sonata with the performer and the audience in mind, his compositional processes and intentions are accessible to everyone, even upon first hearing. In spite of its compositional sophistication, Vine’s Sonata is revered more for being a spectacular performance work. Certainly both works, with their similarities and differences, have earned their place as two of the most important 20th-century piano sonatas.
Bibliography

Primary Sources:


Secondary Sources:


