

Elliott Carter's Analysis of His Piano Sonata (1945-46): A Moment of Music-Historical Agnosia?

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Save for Bartók, Webern, Messiaen and a few others, great composers are not celebrated for maintaining style-historical perspective when drafting music analyses. Schoenberg, for instance, divined proto-serial thinking in works by Beethoven and Brahms, possibly to “legitimate” his own serial technique (Brinkmann 2000, 21-22). Tendentious analysis of this sort evidences neither analytic incompetence nor neurological illness, of course. It reveals, rather, a narrowed analytic focus that is oftentimes part of artistic creativity. Elliott Carter's analysis of the first movement of his Piano Sonata, I submit, is a case in point. In the essay to follow, I will argue that his analysis so misreads, historically *and* structurally, the movement's distinctive treatment of sonata form, a treatment repeatedly prefigured by Beethoven in his two-tempo expositions. I'll conclude by proposing biographical factors that may have informed Carter's seeming agnosia.¹

For those familiar with Carter's biography, it should not surprise that Beethoven's name peppers much of the former's writings on music. Here are two such examples:

(1) The three late sonatas of Debussy have much in common with the last works of a number of composers whose styles changed abruptly near the end of their lives. [...] This same sort of crystallization and clarification of content, as well as a certain restraint or stylization of means, is noticeable in the last works of Bach, Mozart, and Beethoven. (Carter in Bernard 1997, 124)

(2) The question of how much you can expect most listeners to hear is a problem in itself—I wonder how many people hear themes coming back in the tonic of a Beethoven symphony. And furthermore, Beethoven himself, with functional harmony at his disposal, always presented many effects coordinated with the return of themes to the tonic at the beginning of a recapitulation—some emphatic non-harmonic effect such as [...] a pause or a long pedal, so that when the theme returns in the tonic it's very obvious that *something* has happened, whether a listener recognizes it's the tonic or not. Similarly, I use coordinations of different sorts to articulate the flow of musical ideas in my own works. (Carter in Edwards 1971, 104)

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In the first statement, Carter lauds the distillation of form and content in the mature music of Beethoven and of other composers. In the second, he describes obstacles in hearing Beethoven's structures and suggests ways in which he—and Carter, inferentially, in his own music—makes them audible to listeners. These ideas we will revisit later by way of explaining tensions between Carter the composer and Carter the self-analyst. For now, I bring to the reader's attention three Beethoven compositions "prophetic" of Carter's Piano Sonata: (1) Piano Sonata in D minor ("Tempest"), Op. 31, No. 2; (2) String Quartet in B-flat major, Op. 130; and (3) String Quartet in F major, Op. 135. While these works perform differently from Carter's stylistically, comparison of their respective designs and analytic histories with those of his Sonata will, I hope, shed light on the question of Carter's agnosia.

In June 1948, Carter penned his analysis of the Piano Sonata (Meyer and Schreffler 2008, 77). This he had done to supplement a recording of the work made by Beveridge Webster that Edgard Varese would subsequently play in a lecture series on contemporary music at Columbia University (Ibid.).² The analysis starts with a preamble explaining the work's genesis and aesthetic, followed by an outline of its large form supplemented by a handwritten chart of its themes/thematic cells (Meyer and Shreffler 2008, 78). Before we inspect a reproduction of the chart (Example 1), I must stress two points from the preamble. First, Carter composed the Piano Sonata for the "modern concert grand piano." He says that the work:

employs a large range of techniques that are peculiar to that instrument. It carries out [...] my interest in the plastic flow of music and in contrasting rates of change. I am especially interested in the time plan of music, and in the modeling of phrases and sections and their interconnections. (Carter in Meyer and Shreffler 2008, 77)

Extended performing techniques, large scale temporal planning, and interconnections of phrases and sections indeed characterize Carter's music written after 1940. After listing these characteristics, he proceeds to outline the structure of the first movement, with reference to his thematic chart:

The first movement begins with an introduction that contains material which is used throughout the work: the jump of the octave (a) reappears in the work alternating between B and A sharp, which sound the two conflicting tonalities of the work. For, all through the work, there is a conflict between keys a semitone apart. [...] The material of the first movement [...] also consists of two arpeggio figures (c) and (f) and a motive (g), the phrase (e), which suggests the first part of the second theme, and the actual first theme (h), which is used in many different variations throughout the first movement. (Carter in Meyer and Shreffler 2008, 77)

The image displays a musical score for Example 1, consisting of four systems of staves. The first system includes bass clef staves with measures labeled 'a', 'b', 'c', and 'd'. The second system includes a treble clef staff with measures labeled 'c' and 'f', and a bass clef staff with a measure labeled 'g'. The third system includes a bass clef staff with a measure labeled 'h'. The fourth system includes a grand staff (treble and bass clefs) with a measure labeled 'i'. The score features various rhythmic patterns, including eighth and sixteenth notes, and rests. A 'sw' (sustained weight) marking is present above the second system's treble staff.

Example 1: Carter’s chart of thematic cells from his Piano Sonata, first movement.

While this overview speaks to the material of the first movement, it leaves unanswered three questions about the large form: (1) Is the “introduction” an autonomous segment, discrete from the main body of the sonata form? (2) To what extent does the Piano Sonata’s tension involving structural semitone relations (B-A sharp), its two-tonic complex, shape its form? (3) Why does “the actual first theme,” cells (g) and (h), occur in the middle of a structural block (measures 44-48), transition-like, when preceded by a repeated “two-tempo complex” (Brodbeck and Platoff 1983, 149-62) that recurs at critical moments in the sonata form? To tackle these questions, let us turn to the composer’s prose outline (Table 1), referring back to his thematic chart as needed. A caveat: the outline’s page numbers clash with those in the published score.³ So I have inserted measure numbers in angled brackets followed by my estimated page numbers in the published score, the latter numbers placed in rectangular brackets; asterisks separate the respective bracket-pairs for each entry in the table.

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Table 1: Carter's prose outline of the form of his Piano Sonata.

Introduction: pages 1-2, end of the fourth brace, <1-32>*[3-4]

First theme: page 2, 5th and 6th braces to page 4, fourth brace, featuring (g) and (h), <33-70>*[4-7]

Transition: page 4, brace 5 to page 5, brace 5. Note return of (a) at end, also (i), <71-82>*[7-8]

Second themes [sic]: page 5, brace 5 to page 5. Note (i) at the end. <83-108>*[8-10]

- page 6, brace 5 to page 7, first measure. Note three-part canon bottom of page 6 [9]
- page 7, second measure to fifth brace: development of (i) with new phrases, <108-122>*[10-11]

Development: return of (b) in harmonics, page 7, last brace, <123-133>*[11]

- page 8, top to fifth brace: development of (c) with fragments of (b) and (h), <134-138>*[12] (cont'd)
- page 8, last brace, to page 9, fourth brace, last two measures: variations of (h), <139-155>*[12-13]
- page 9, fourth brace, last measure to bottom: part of second theme in bass, <155-160>*[13]
- page 10, top to fifth brace: variation of (h) with (a) jump of octave which becomes repeated notes, <161-184>*[14-15]
- page 10, last brace to bottom of page 11: repeated notes and development of (f), amplification of intervals of (h) last two measures, <185-196>*[15-16]
- page 12: interruption of development of (f) by statement of part of second theme which is derived from (e), top two braces, <197-214>*[16-17]
- page 12, braces 3,4,5, and first part of 6: continuation of development of (f), <215-23>*[17]

Recapitulation: begins with statement of (f), page 12, bottom, to page 13, bottom. Return of (h) and (g), <223-251>*[17-19]

- page 14, return of introduction in varied form, <252-264>*[19-20]
- page 14 last brace, to page 15, brace 3: return of second phrase of second theme, <265-270>*[20-21]

Coda: page 15, brace 2 to end: from (c), (e), and later (i), <270-303>*[21-23]

According to Table 1, Carter designated measures 1-32 as an introduction, corresponding to the above described “two-tempo complex.” This means that the Maestoso “introduces” the Scorrevole not once but twice. Since this complex will recur both at the development *and* at the recap, however, one senses a precariously thin line between an introduction that “contains material that is used throughout the work,” and an introduction that projects or rotates, as James Hepokoski and Warren Darcy (2006) might say, across the entire movement.

While Carter’s placements of the transition and second group are tenable; location of the recap, starting with (f) at measure 223 is not. Why? His point of recapitulation starts not with the first theme “featuring (g) and (h)” but with material from the “introduction.” What is more, measure 252 (Maestoso) contains a “return of the introduction in varied form.” Can a mere introduction to a sonata be so thematically rich as to return repeatedly in varied form? Moreover, the same Maestoso exposes a heretofore covert link between it and the canonic idea in the second theme, introduced at measure 102, then reprised at 265. Aside from the Meno mosso tempo and the pedal tones present in the two sections, their linkage at 265 yields one of the movement’s few V-I(i) motions, foiling its underlying I-#VII polarity, more of which below. As shown in Example 2, the iterated co-tonic B flat in measures 262-264 morphs by way of under-third motion (B flat→G flat/F sharp) into an implied enharmonic A sharp, slipping to A natural (measure 265) which then completes a minor dominant of B minor resolved in 267 and prolonged until 270, the bridge to the coda.⁴

Example 2: Measures 262-267, transformation of co-tonic B flat to enharmonic A sharp en route to B minor.

Before tying Carter’s analytic contradictions to what Daniel Chua (1995, 210) terms “ectopic” sonata structure in Beethoven’s late music, let us pause to compare Carter’s analysis of his Piano Sonata to those by David Schiff and Charles Rosen, themselves members of the composer’s inner circle.⁵ Schiff, who hears the first movement as having “vestigial outlines of sonata allegro design,” reminisces:

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Carter claimed that it contained ‘no true development in the classical sense [...] all the ideas are in a constant state of change, expansion, contraction, intensification. Yet at the same time the Sonata displays a conspicuously sophisticated approach to the classical forms [*sic*] of sonata allegro and fugue.

The first movement can be divided into an exposition (with two thematic groups), development and recapitulation, but with a number of escape clauses. It begins with a slow *maestoso* introduction that returns at several points in the movement: bars 24-32, 123-28 (in harmonics) and 251-63. [...] The first return interrupts the initial fast theme; the second marks the beginning of the development, and the third comes in the middle of the recapitulation, between the two theme groups rather than as an introduction to the first. (Schiff 1998, 205-209)

Carter’s claim (undocumented by Schiff) that there is “no true development” gainsays the former’s inclusion in the outline displayed in Table 1. Moreover, Schiff dodges the gaps in his own analysis by way of “escape clauses” (take his reading of the *Maestoso* segments). Ironically, such analysis jibes with Carter’s, since it de-thematizes the *Maestoso*, whose several recurrences Schiff sees as form-breaking rather than form-making.

Charles Rosen, in contrast, analyzes the structure of the Sonata from a “long century” perspective. He observes:

There are a great many traditional elements in this Sonata, of course. The sonata form of the first movement has a clear exposition of the first and second themes, a development section, and a recapitulation. The recapitulation is unusual in the way that is marvelously dovetailed with the development. There is, of course, a classical tradition behind that: there are a number of cases of Haydn doing it, although the tradition was largely lost in the nineteenth century. [...]

What I am trying to demonstrate is that while some of the classicism in this work is imposed from without, much of it is reconquered from within. In other words, the outward shape of the piece is a relatively conventional sonata in which there are some very radical musical materials. It is significant that the piece opens not with a theme but with the sonority of the octave Bs out of which all the themes emerge. Deriving themes from the actual sound is a very extraordinary development in the history of music, and one which Carter’s subsequent compositions extend in an even more radical way. If I am right about the first movement and much of the second movement as well, even the tonality is not the traditional triadic tonality but is a reinvented tonality, Carter achieves the sense of B major without the tonic-dominant relationships and without much use of the B-major triad. The central feeling of B major stems from the sonority of the piano itself and the harmonics it can produce. (Rosen 1984, 10)

Rosen states correctly that mid-phrase recapitulation happens in Classical music, though its use by Haydn (see Symphony No. 102, Mvt. 1) does not resemble that

found in Carter’s Piano Sonata. As we will see, it is *Beethoven’s* mid-phrase recapitulations—in his two-tempo sonata forms above all—that more closely prefigure Carter’s in the Piano Sonata. Rosen, like Carter and Schiff, de-thematizes the Maestoso segments. In so doing, however, he discovers that the “themeless” Maestoso emanates from the piano sonority itself (Rosen 1984, 4). That is, the thematic material of the entire movement, derives from the equal-tempered harmonic series of the initial bass note B and its synoptic expansion into a quintal aggregate theorized by Rosen, one that represents the source chord for the entire movement (see Example 3).⁶



Example 3: Charles Rosen’s acoustically-derived source chord for Carter’s Piano Sonata.

Amusingly, Rosen imparts the backstory of the above example as follows (emphasis his own):

I telephoned Mr. Carter one day to tell him that I had remarked that playing the B natural with considerable force stimulates the B flat harmonics on the piano but does not stimulate the A natural. This struck me as odd [...] I had always understood the minor seventh is a more powerful harmonic than the major seventh [...]. Mr. Carter’s reply to this was, “Perhaps that’s just something about your piano. Have you tried it on other pianos?” I was very pleased to see he knew as little about acoustics as I did.

I finally looked it up in a musical dictionary and learned that in equal temperament the major seventh, and the minor seventh [*sic*], is an important overtone and *that the notes of Carter’s basic chord are in fact the only harmonics that have any importance in equal temperament [...]*. This is almost subliminal, but it certainly works on our sensibilities and obviously worked powerfully on Carter’s. I think we can take Carter literally when he says that he tried out the sonorities of the piano, and that the piece eventually emerged from them. (Rosen 1984, 7-8)⁷

While the arpeggio-like cells derived from this chord propel the music forward locally (see c, e, f, h, i in Example 1), the tension between B and A sharp/enharmonic B flat frames, literally, its two-tempo sonata form. With reference to Example 3, the tension between B and A sharp/enharmonic B flat enunciates critical points in the structure, starting with its brute-force iteration in the Maestoso in measures 1-15 (Example 4a) and ending in the coda, where the movement closes on a B flat octave (not shown here).

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Example 4a: Measures 1-15 of Carter's Piano Sonata, Mvt. I, showing brute-force iteration of B-A sharp in the bass.

Let us further explore Carter's seeming agnosia in view of the Beethovenian shadow looming above (and behind) his Sonata. Schiff, tracing the Maestoso's recurrences within the first movement, drew ironically a parallel between these recurrences and those of the Largo music in Beethoven's "Tempest" Sonata, Op. 31, No. 2:

The first return interrupts the initial fast theme; the second marks the beginning of the development, and the third comes in the middle of the recapitulation, between the two theme groups rather than as an introduction to the first, see above. (Schiff 1983, 209)

Example 4b displays the opening Largo of Op. 31, No. 2. Beethoven's initial Largo both "introduces" and "interrupts the initial fast theme" (measures 6-7, compare Carter's in 1-33, compare Examples 4a and 4b).

Example 4b: The opening of Beethoven's Piano Sonata, Op. 31, No. 2.

To continue, the Largo, writes Schiff, “marks the beginning of the development,” as does the Maestoso in Carter’s in 123-133 (see Examples 4c and 4d). Last not least, the Largo “comes in the middle of the recapitulation, between the two theme groups rather than as an introduction to the first,” (measures 153-157, compare Carter’s 223-225, then 252-254, Examples 4e and 4f); Schiff implies, of course, the second of the two Largo statements here. While the last homology with Carter is less neat than the first two, it deserves mention since both the Largo and Maestoso segments critically modify their respective recapitulations. In Beethoven’s recap, the Largo section blossoms first into a recitative, then into a virtuoso flourish leading immediately to a recap of the second group.⁸ Carter, as noted earlier, places the Maestoso between the two theme groups, *reversing* the two tempi of the first group and skipping to the midpoint of the second group (measure 265, review Example 2).

The musical score for Example 4c consists of three systems of piano music. The first system is marked "Tempo I (Maestoso) ppp" and includes performance instructions: "press down silently" and "sust. pedal on off". It features a bass line with a forte (*f*) dynamic and a treble line with a piano (*pp*) dynamic. The second system is marked "pp" and "velocemente", showing a treble line with a piano (*pp*) dynamic and a bass line with a fortissimo (*ff*) dynamic. The third system is marked "Meno mosso" and "rit.", with dynamics ranging from piano (*p*) to mezzo-forte (*mf*). It includes markings "X" and "Y" above specific notes in the treble and bass staves.

Example 4c: Opening of the development section of Carter’s Piano Sonata, measures 123-133.

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Musical score for Example 4d, showing the opening of the development section of Beethoven's Piano Sonata, Op. 31, No. 2, Movement I, measures 92-98. The score is in G major and 3/4 time. It features two systems of music. The first system includes a first ending (1.) and a second ending (2.). The first ending is marked *f* and the second ending is marked *pp*. The second system includes a *ff* marking and a triplet of eighth notes. The score is annotated with asterisks (*) and a circled asterisk (*). The key signature has one sharp (F#) and the time signature is 3/4.

Example 4d: Opening of the development of Beethoven, Op. 31, No. 2, Mvt. I, measures 92-98.

Musical score for Example 4e, showing the opening of the recapitulation section of Carter's Piano Sonata, Movement I, measures 223-225, then 252-254. The score is in G major and 3/4 time. It features three systems of music. The first system includes a *8va* marking and a *f* marking. The second system includes a *marcato* marking and a *f* marking. The third system includes a *Tempo primo (Maestoso)* marking, an *espressivo* marking, and *f* and *mf* markings. The score is annotated with circled numbers (4) and a circled asterisk (*). The key signature has one sharp (F#) and the time signature is 3/4.

Example 4e: Opening of the recapitulation in Carter's Piano Sonata, Mvt. I, measures 223-225, then 252-254.

Example 4f: Opening of the recapitulation of Beethoven's Op. 31, No. 2, Mvt. I, measures 142-163.

How many times must an introduction introduce before we can call it a theme? Surely, Carter's introduction does not introduce a sonata structure as Haydn's does at the outset of, say, his Symphony No. 104 in D Major. We may assay Carter's introduction more clearly, however, through the lens of sonata theory, as devised by Hepokoski and Darcy (2006). Among other valuable contributions, their research offers a taxonomy of sonata forms (types) and heuristics for navigating them. Two such heuristics obtain here: *deformation* and *zero modules*. The authors gloss *deformation* as:

The stretching of a normative procedure to its maximally expected limits or even beyond them—or the overriding of that norm altogether in order to produce a calculated expressive effect. It is precisely the strain, the distortion of the norm (elegantly? beautifully? wittily? cleverly? stormily? despairingly? shockingly?) for which the composer strives at the deformational moment. The expressive or narrative point lies in the tension between the limits of a competent listener's field of generic expectations and what is made to occur—or not occur—in actual sound at that moment. Within any individual exemplar (such as a single composition) operating under the shaping influence of a community-shared genre-system, any exceptional occurrence along these lines calls attention to itself as a strong expressive effect. As such it marks an important event of the composition at hand, A deformation may

occur either locally, producing a momentary or short-range effect, or broadly over the large-scale architecture of music as a whole. (Hepokoski and Darcy 2006, 614)⁹

As the authors explain, deformation may occur both globally and locally within a sonata form. The deformation Carter downplays in his analysis involves not just the two-tempo complex in the Primary Theme or **P** (Hepokoski and Darcy's symbol) but its power to stretch the limits of sonata form in ways that follow—with still more irony—the paths of Beethoven, Liszt, Franck and other such deformers. As we have seen, the two **P** tempi in Carter's Piano Sonata are structurally interdependent; the first does more than simply raise the curtain on the second.

The second of the heuristics, *zero-modules*, categorizes the structural behavior of the two-tempo **P**. Hepokoski and Darcy write:

It is not uncommon for individual zones—especially **P** and **S** [Secondary Theme]—to begin with music that, even while opening that zone, seems preparatory to a more decisive (or more fully launched) module that follows. This aspect can take on different realizations, some of which are “thematic” some of which are not. One might find: an introductory vamp [...] an initial group of “set-apart” emphatic chords; a quasi-fanfare motto [...] that “clears the way” and then proceeds onward to contrasting material; an obvious anacrusis module [...]. A zero designation [e.g., **P**⁰] indicates the results of an interpretive decision that proposes either that the module at hand displays an overt preparatory function [...] or that the initial module conveys the sense of something “destabilized” [...]. If the analyst decides that such an introductory model is not as fully separate from what follows to merit the “zero” label per se, a lighter alternative is the use of a 1.0 label [e.g., **P**^{1.0}], the next module of which, still more decisive, would be understood as 1.1. At issue here are only degrees of strength and analytical nuance: often either the “zero” or the 1.0 label will be workable. In either case, the zero-module will lead directly into something more secured and normative for that zone [...]. Zero-modules are not musical ideas that stand outside of the zone proper. A **P**⁰- or **P**^{1.0}-module launches the **P**-zone and therefore belongs to **P**-space (and hence to expositional space). (Hepokoski and Darcy 2006, 72-73)

Two of the above ideas powerfully engage a two-tempo **P**. First, **P**⁰ can be inflected structurally to be thematic: the authors even mint a symbol for such interdependency, namely, **P**^{1.0}, **P**^{1.1} (Hepokoski and Darcy 2006, 72). Second, such **P**-modules inhabit expositional space. These ideas inform both thematic coherence in a two-tempo complex and will be useful in positing certain homologies between Carter's Sonata and two of Beethoven's late quartets to be treated presently.

In the first movement of Beethoven's String Quartet in B-flat Major, Op. 130, one finds a **P**^{1.0}, **P**^{1.1} that foreshadows Carter's. Example 5a shows that the

opening Adagio ma non troppo “introducing” the Allegro in measure 14 returns in 20, now grounded on V, which is prolonged through the next Allegro. The second Allegro links the iteration of **P** in the exposition with the transition to the second group, alighting on the flat submediant (Example 5b). For reasons to be discussed, it’s worth noting here that structural mediant relations are not happenstance in this movement, for a chain of thirds links the Adagio to both the Allegro and, later, to S. Chua (1995) probes this idea in his study of the “Galatzin” quartets mentioned earlier.¹⁰

Adagio ma non troppo

Allegro

Example 5a: Beethoven’s String Quartet in B-flat Major, Op. 130, Mvt. I, measures 1-20.

Example 5b: Beethoven's String Quartet in B-flat Major, Op. 130, Mvt. I, measures 53-57.

But Carter welds $P^{1.0}$ to $P^{1.1}$ more tightly than does Beethoven in his quartet. He fashions a pseudo-modulation of tempo (sixteenth equals sixteenth) that links the Maestoso and Legato scorrevole tempi in tandem with a modulation of affect: the autograph score shows “molto sostenuto e [sic] espressivo” in measures 2-3 of the Maestoso plus “flowing and expressive” over what would be published as Legato scorrevole (Meyer and Schreffler 2008, 74). Apart from these features, we can compare Beethoven's trans-sectional prolongation of V here with Carter's projection of the Maestoso's I-#VII polarity into the Legato scorrevole. Example 5a suggests an homology between Beethoven's V prolongation (measures 7-30) and Carter's I-#VII, save that the latter prolongs the #VII not through imitative counterpoint but rather brute-force repetition and registral emphasis of pitch classes B and A sharp (compare Example 4a). And just as Chua's third-chains unified Beethoven's Adagio-Allegro complex, Carter carries the initial leap and the descending whole-step cells of the opening Maestoso (a and d, Example 1) transformationally into the Legato scorrevole.

The musical score is divided into four systems. The first system features Violin I, Violin II, Viola, and Violoncello parts. The tempo markings are *Tempo primo* and *Allegro*. Dynamic markings include *più p*, *pp*, *p cresc.*, and *pp non legato*. The second system continues the string parts with markings like *p cresc.*, *pp*, *pp non legato*, and *espressivo*. The third system shows *sempre p* and *non legato* markings. The fourth system continues the string parts with *sempre p* and *non legato* markings.

Example 5c: Opening of development section, Beethoven, Op. 130, Mvt. I, measures 93-114.

Yet another homology between the two works informs the openings of their respective development sections. Comparing Examples 4c and 5c, one sees that Beethoven and Carter juxtapose shards of their respective $P^{1.0}$ - $P^{1.1}$ groups. Moreover, each of these respective sections emerges organically out of

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decelerated closing gestures of their expositions, recalling the incipits of their respective movements. Uncanny is how Beethoven exploits indwelling harmonicities of the string texture, thereby foreshadowing Carter's artificial harmonics in recalling the "a" cell of his Sonata.¹¹ In measures 95-96 of Op. 130, Violin 2's D flat₄ leaps an octave across silence to enharmonic C sharp₅, doubled as a quarter-note by Violin 1 and replaying the fanfare-fourth motive launched in measure 14. By way of reliving measures 14ff, Violins 1 and 2 then move by oblique motion to dyad F sharp₄-C sharp₅, measures 96-97, where Violin I leaps a fourth to unsupported F sharp₅. The music in measures 95-97 is then transposed down a major third in 98-100.¹² Octave leaps between the Violins in measures 95-96, 96-97, 99-100, and 100-101 dramatize the octave's 2:1 harmonicities, this compressing the Cello's two-octave leap of F₂-F₄ that began the canon in measure 7. For the remainder of the development section, the fanfare motive alternates between leaping fourths *and* octaves in Violin 1, the latter of which sprouts a transformation of S, whose initial leap of a minor sixth in measure 55 (Violin 1, B flat₄ to G flat₄), expands to an octave, measures 106-107 (Cello, A₄ to A₅).

Like Beethoven, Carter starts his development by juxtaposing two fragments of P, (a) and (h) (review Example 4c). The local modification of (a) looks backward historically not only to P and to Beethoven's Op. 130, but to the A section of Schoenberg's *Klavierstück*, Op. 11, No. 1 (Example 5d). Carter, like Schoenberg, nests his harmonics not within interphrasal silence *à la* Op. 130 but within a silently depressed E flat₄-C₄ dyad sustained across the entire section, starting with the bass's F₁-A flat₁ → F₄-A flat₄. These dyads progress to F₃-A flat₃ → G₃-B flat₃ and are then displaced upwards to G₄-B flat₄ → F₄-A flat₄, amalgamating (a) and (b). The "silent" E flat₄-C₄ excites the harmonics of all the preceding dyads.¹³ In measures 126-127, the fundamentals of G₄-B flat₄ → F₄-A flat₄, stronger than those of their lower octave, amplify the harmonics of C₆-E flat₆ which congeal into *echt* fundamentals (see measure 128).

Die tasten tonlos niederdrücken! **Langsamer**

The image shows a musical score for three measures of Schoenberg's Klavierstück, Op. 11, No. 1. The score is in 3/4 time and features a sustained E-flat₄-C₄ dyad in the right hand. The left hand plays a rhythmic pattern of eighth notes. Dynamics include *sf*, *sf* *ohne pedal*, *p* < >, *sf* *ohne pedal*, and *p*. The tempo is marked 'Langsamer'. Above the first measure, there is a note 'Die tasten tonlos niederdrücken!' and a 'flage.' marking. Above the second and third measures, there are 'd.' markings. The score is written on a grand staff with a treble clef and a bass clef.

Example 5d: Artificial harmonics in Schoenberg's *Klavierstück*, Op.11, No. 1, measures 14-16.

At *Velocemente* (measure 129), the sustained E flat morphs into enharmonic D sharp of a G-sharp minor aggregate recalling (c) and (h). The E flat becomes enharmonic scale-degree 3 of B major and the flattened seventh of F minor. Both tonalities collide in measures 122-123, doing so in retrograde, measure 130 (review Example 4c [letter X]). In the same measure, the aggregate C₅-F₅-D flat₅ “resolves” by upward leap to a B major triad. That aggregate, spelled as incomplete German sixth in A major, equals enharmonic V⁷ of B-flat major, the movement’s “other” tonic. In measures 133-134, B flat resurfaces in as enharmonic A sharp in the A sharp-C sharp dyad (letter Y) leading into the *Scorrevole* following.¹⁴ Whether Carter channeled the development of Beethoven’s Op. 130, No. 1 while composing his own is anyone’s guess. What is remarkable, is that both composers juxtaposed marked oppositions of tempo *and* timbre to integrate P^{1.0}-P^{1.1} elements into their respective development sections.

The image displays two systems of musical notation for the recapitulation of Beethoven's Op. 130, Mvt. I, measures 131-134. The first system covers measures 131-134 and includes staves for Violin I, Violin II, Viola, and Violoncello. Dynamics are marked as *dim.*, *pp*, and *cresc.*. A *non legato* marking appears in measures 133-134. The second system covers measures 135-138 and includes staves for Violin I, Violin II, Viola, and Violoncello. Dynamics are marked as *f*, *p*, and *f*. A *non legato* marking appears in measure 138.

Example 5e: Recapitulation of Beethoven, Op. 130, Mvt. I, measures 131-134.

Affinities between the two works’ recapitulations must be mentioned as well. Carter’s recap starts with *Scorrevole* material (measure 223, review Example 4e), from which *Maestoso* material reenters at 252, bridging the truncated reprise of *S* at 265 (review Example 2). Beethoven’s recap enters at measure 131 but with the *Allegro* component of *P* (Example 5e) saving the *Adagio* for the coda, where

juxtapositions of $P^{1.0}$ - $P^{1.1}$ denser than those in the development expand into euphoric reconciliation of the two protagonists. Carter's recap starts with *Scorrevole* material (measure 223, Example 5e), where the *Maestoso* reenters at 252, bridging the reprise of **S** at 265, (review Example 2).

Hepokoski and Darcy talk elsewhere in their book about a "false start" quality in P^0 expositions (see fn. 8). To build on this idea, the first movement of Carter's Piano Sonata shares with that of Beethoven's Op. 130—perhaps more than with any other P^0 form by the latter—a dialectic between "dissociation and integration," as noted by Brodbeck and Platoff (1983, 162):

These recurrences mean that, for listeners, the function of the Adagio and the relationship between its material and that of the Allegro are constantly changing. It's no coincidence that these unexpected interpolations occur at the main articulations of the form: practically at the start of the exposition, at the opening of the development, *not* [...] in the recapitulation, and at the beginning of the coda. The undermining of the formal procedures of sonata form as well as its harmonic structure is central to Beethoven's purpose. [...] In the end, dissociation and integration exist side by side.

Chua (1995, 210) for his part, weighs the cognitive ramifications of these ideas, the "question of how much you can expect most listeners to hear," recalling Carter's earlier phrase:

What is the 'logic' behind this 'madness'? Perhaps the best word to describe it is 'duplicity.' For what confronts the analyst is no longer just contrast but a strange kind of 'double-mindedness' that forces him to dither. The paradoxes in the work are engendered by a fission in the construction, in which elements [...] insist on happening twice. Confusion arises from the blur of double images, and the clarity of events in the Classical language breaks down the face of this 'duplicity.' [...] Beethoven creates a structure of 'undecidability' in which it is difficult for the rational mind to elicit a logic of simple binary oppositions so vital in eighteenth and nineteenth century music; the tension of conflict and resolution, contrast and synthesis often associated with the functions of sonata form is eroded. It is not that these oppositions no longer exist; rather the singularity of their logic is blurred by their being doubled, so that, for example, the ascendancy of Allegro over Adagio, or resolution over tension, [...] called into question. The 'duplicity' of the work confuses those elements in a series of paradoxes that signal a redistribution of the functions of a sonata structure. At every moment of structural punctuation there is a deflection, a deferral, or a functional inversion. (Chua 1995, 210)¹⁵

Had the "structural duplicity" of Carter's Sonata blurred his analysis of its form? Returning to the initial contention of this study that a composer's creative drive may narrow his/her analytic frame of reference, let us refine the initial question regarding Carter's agnosia: Was he so fixed on composing out the

Piano Sonata's quintal matrix (Rosen) that he analyzed cell (h)—the most pervasive expression of the matrix—as **P**, rather than making it but one *component* of **P**, encoded in the “introduction” by (c)? One might compare such analysis to Beethoven's conferring **P** status upon the dactylic figure in measures 37-39 of Op. 130, No. 1 (transition) despite that figure's stemming from its motivic prototype in measures 9-12, the Adagio part of **P**. In terms of sonata rhetoric, Carter's cell (h) and Beethoven's dactylic figure both drive the transitions of their respective expositions, rather than proclaiming actual themes.

Carter was not alone in misreading two-tempo sonata forms. Arnold Schoenberg may have done similarly when analyzing the thematic material of Beethoven's String Quartet in F Major, Op.135, Mvt. 4 (see Examples 6a-c). Like Op. 130, No. 1, Op. 135, Mvt. 4 unfolds as a two-tempo complex (less involved than that of Op. 31, No.2 and Op. 130) made of a storied Grave (“*Der schwergewasste Entschluss*”) joined to an Allegro.

Though the Grave returns just once before the recapitulating Allegro (measures 161-174), one puzzles retroactively as to whether the Grave works as an introduction, and/or retransition, and/or recapitulation. Using Beethoven's compositional process to “legitimate” his own, Schoenberg writes of the opening Grave in his 1941 essay, “Composition with Twelve Tones” (see Example 6c):

The basic set is used in diverse mirror forms. The composers of the last century had not employed such mirror forms as much as the masters of contrapuntal times; at least they seldom did so consciously. Nevertheless, there exist examples of which I want to mention only one from Beethoven's last String Quartet, Op. 135, in F major.

The original form, *a*, ‘Muss es sein,’ appears in *b* inverted and in the major; *c* shows the retrograde from of the inversion, which now reinverted in *d* and filled out with passing notes in *e*, results in the second phrase of the main theme. Whether or not this device was used consciously by Beethoven does not matter at all. From my own experience I know that it can be also be a subconsciously received gift from the Supreme Commander. (Schoenberg 1975, 220-222)

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Grave ma non troppo tratto

Violin I

Violin II

Viola

Violoncello

Adagio

Allegro

Example 6a: Beethoven's Quartet in F Major, Op. 135, Mvt. IV, measures 1-27.

Violin I
Violin II
Viola
Violoncello

ff *ff* *ff* *ff* *sf* *sf* *ff* *sf* *ff* *sf*

f *f* *f* *f* *dim.* *p* *f* *f* *f* *dim.* *p*

f *sf* *f* *f* *dim.* *p*

f *sf* *f* *f* *dim.* *p*

cresc. *cresc.* *f* *dim.* *dim.* *dim.*

p *cresc.* *f* *dim.* *dim.*

cresc. *f* *dim.*

Example 6b: Beethoven's Quartet in F Major, Op. 135, Mvt. IV, measures 161-173.

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The image displays a musical score for the fourth movement of Beethoven's Op. 135, divided into two sections: **Grave** and **Allegro**. The **Grave** section is in 3/2 time and features the lyrics "Muss es sein?". The **Allegro** section is in common time and features the lyrics "Es muss sein!". The score includes a **Head-motive** and various musical notations such as triplets and fingerings (a) through (e2).

Example 6c: Arnold Schoenberg's thematic analysis of Beethoven, Op. 135, fourth movement.

In his analytic graph (Example 6c), Schoenberg labels the opening 3/2 section "Introduction." Despite appealing to Beethoven as kindred spirit, however, he omits mention of its return in 161-173, Example 6b; this passage, as we see, is a composite *and* composed embodiment of his proto-serial analysis of the first Grave. As can be gleaned from measures 171-173, however, the return subsumes the "original" and "mirror" forms of a as identified in levels a) through c) of the graph (tonally adjusted), endowing the Grave with P^0 implications.

It is reasonable, I think, to assert that Schoenberg's gaze upon permutability of the germinal motive in Op. 135, No. 4 distracted his attention from historical, if not formalistic, precedents for the movement's structure. Milton Babbitt observes:

Schoenberg cites Beethoven's Op. 135 as a work adumbrating, in motivic form, the operations of a twelve-tone system, while admitting that the motivic transformations in Beethoven are not literal, because of the tonal functions they must fulfil. But this is the crux of the problem. For it is just this aspect of the tonal motive, which is subject to the predetermined boundary conditions of tonality, that completely differentiates it from the twelve-tone set and its transformations which are themselves the fundamental boundary conditions. The tonal motive assumes functional meaning within context and becomes, in turn, a vehicle of movement within this context; the twelve-tone set, however, is the instigator of movement, and defines the functional context. To equate a compositional element with a pre-compositional element is not only to confuse the nature of the systems but to reduce the number of levels of musical meaning, and as a result, to reduce the functional multiplicity of the individual note. (Babbitt 2003, 16-17)

Babbitt chides Schoenberg for falsely equating motivic behavior in tonal and twelve-note musics so as to violate their respective "fundamental boundary conditions" (the rules of each system). By the same token, Carter, as self-analyst, allowed motivic cells defined by his quintal neo-tonality to supersede fundamental boundary conditions of its sonata form in general, and of its P^0 organization in particular.

To what extent, then, does Carter's apparent disregard of compositional precedent symptomize a music historical agnosia? In his essay, "To Be a Composer in America" (Carter, 1953 [1994]), he speaks of the perennial struggle in composition to balance flow and form:

The context of any musical event gives meaning to that event, a meaning that it can never achieve for itself. In spite of this almost self-evident idea, most of the composers of recent times, while sometimes quite inventive in terms of melody, harmony and rhythm, have all too frequently taken a conventional attitude toward form. [...] Now, even to start with the idea of writing a fugue is to be forced to accept a whole range of predigested ideas that make the task of inventing an interesting flow more difficult. It is very hard to chase out the specter of Bach [...] and the same can be said of Beethoven and others in connection with sonata form. Composers [...] have generally forgotten today how important musical flow and continuity are and have often relegated them to conventional observances. This is a great mistake. (Carter in Bernard 1997, 206)

At first, the above screed may seem ironic *vis-à-vis* Carter's analysis of the Piano Sonata, since the specter of Beethoven demonstrably shadows both the design of the first movement and of the second movement's fugue as well.¹⁶ In all probability, however, Carter's silence on the P^0 structure of the first movement did not result from agnosia. His wide music literacy would preclude this. Such silence more likely arose from his going with the musical flow to the point of virtually chasing out the specter of Beethoven, if not the "pre-digested ideas" of

sonata composers who followed him. Indeed, Schiff tells us that Carter conceived the Sonata as a riposte to what he deemed the austerity of neo-classicism:

The basic premise of the Sonata is the interaction of a virtuoso soloist with the modern grand piano. Free from the constraints of ensemble playing, the Sonata pursues a rhythmic idiom that is complex in metrical design and improvisatory in its manner of execution. Carter also wanted to move away from the neo-Classical piano writing of Stravinsky and Hindemith and sought to renew the grand piano sonority of nineteenth-century piano writing. While working out the Sonata he discussed his concern for the development of a new grand piano style with Samuel Barber who was writing his Sonata at the same time and had similar goals. (Schiff 1983, 203)

Carter broke with the neo-classicisms of Stravinsky and Hindemith by celebrating the sound of the piano *per se*. Moreover, he infused into the Piano Sonata an improvisatory element, which seconds Rosen's thesis that Liszt's Piano Sonata in B Minor may have further inspired Carter, owing to the primacy of dramatic gesture in both works (Rosen 1984, 3). For Carter, his Sonata's improvisatory spirit, embodied in the rich "interconnection" of sections, offers a credible explanation for his Scorrevole analysis of the first movement. Felix Meyer and Anne C. Shreffler aver:

Carter's analysis is interesting above all for its emphasis on small thematic cells, their relationships to each other, and their infinite capacity for transformation. This kind of material, which as Carter tells Varèse, is inspired by the sonorous possibilities of the grand piano, has implications for the form of the piece. Rather than developing "blocks" of material sequentially, the piece takes on a fluid form in which motivic cells are transformed, combined, recalled, and foreshadowed. (Meyer and Shreffler 2008, 76)

Last, but not least, Jonathan Bernard's interpretation of the Piano Sonata gives prospective insight into the work and its analysis. Rather than interpreting the Maestoso-Scorrevole dialectic as being either introductory or thematic, Bernard envisages "different varieties of music characters, speaking their lines in alternation" (Bernard in Boland and Link 2016, 15). His reading anticipates works such as the String Quartet No.2, where Carter, in his program note, baldly anthropomorphizes each of the instruments in analyzing their respective structural roles (Carter in Stone and Stone 1977, 273-274). Perhaps future research will disclose the young Carter's sense of Beethoven's late music, through analysis of this repertoire done by himself or with Nadia Boulanger. There is no question that her notion of *la grande ligne*, which she especially prized in Beethoven's music, deeply impressed the young composer:

When she conducted the [Bach] cantatas, even when she played accompaniments for Romantic songs such as those by Schumann or Fauré [...] Mlle. Boulanger taught us to feel an inexorable, constant beat, a push forward regularly like the march of time throughout the work. This gave the piece of music its forward motion and a great sense of continuity. There was no dwelling, so to speak, on beautiful moments [...]. This was one of the ways we were encouraged to play [...] and appreciate music, and of course another element was *la grande ligne*, the long line of the music that flowed from beginning to end in one grand melodic sweep. Mlle. Boulanger was very fond of showing how Beethoven achieved this, and also Bach and Mozart. We were constantly encouraged to think about this particular aspect of large-scale continuity in its linear and rhythmic sense—certainly an invaluable lesson. (Carter in Bernard 1997, 287-288)¹⁷

The beauty of Carter's Piano Sonata is that it *does* “dwell on beautiful moments” while enfolding them within *la grande ligne*. His analysis subordinated, understandably, *Formenlehre* to *la grande ligne*, the latter unfolding through methodical exploitation of the piano's acoustical possibilities. Paradigmatic in this regard is the transition between the first *Maestoso* and *Legato scorrevole* sections, where a triple modulation of motive, tempo, *and* timbre instantiates “large-scale continuity,” one that subtly interlinks its pied subsections. For Carter, the self-analyst, the idea that such links may have occurred at structural points correlating with those in Beethoven's Op. 130, No. 1 was less important than extracting the materials that enabled such continuity. In a word, he crafted his 1948 analysis for Varèse more on the music desk than on the writing desk. We may conclude, then, that Carter did not suffer music historical agnosia when composing the Piano Sonata. Rather, he had internalized Beethoven's “deformations” of the sonata *topos* so deeply, as to translate them both poietically *and* poetically into his own idiom. Arthur Berger, reflecting on the state of music analysis in the late twentieth century, eloquently compared the “rightness” of a composer's analysis of his or her own work to that of one made by a non-composer (Berger 2002, 184):

An age like our own in which composers are analysts—their own analysts as part of it—imposes a special burden upon the non-composing analysts who find themselves, in competition with the composers to do the “right” thing and determine how the composers would analyze their own music [...]. Composers need not have the last word with respect to their own works. There may still be things they may have conceived as creators that they fail to conceptualize as observers even in their own music, things they must dig up on their own. This does not mean they did not know what they were doing and this should not be held against them. It means there is a different sense of “know.”

Notes

¹ *Webster's Third International Dictionary* defines agnosia as “the partial or complete loss of ability to recognize familiar objects especially by seeing, hearing or touching and usually as a result of brain damage.”

² In a footnote on p.77, the authors report that Webster Aitken premiered the Sonata at the Frick Museum, 16 February 1947 (Meyer and Shreffler 2008, 76).

³ There exist two editions of the Piano Sonata, the first by Mercury (1948) and the second, revised in 1982, by Mercury/Presser. The differences between the two are trivial.

⁴ Compare B minor: v-i to F minor v-i in measures 102-108.

⁵ “Ectopic,” according to *Webster's Third New International Dictionary*, means “occurring in an unusual position or in an unusual manner or form.”

⁶ Schiff (1998, 206) nicely clarifies linkage of the two tonics, B and A sharp/B, by way of the A sharp/B flat comma in the circle of tempered fifths: E-B-F sharp-C sharp-G sharp-D sharp-A sharp/B flat-F-C-G-D-A.

⁷ Rosen (1985, 5) traces the timbral element of the Piano Sonata back to the textures of Chopin and Debussy. Schiff (1998, 204) hears not only echoes of Debussy in the Sonata but of Copland, especially in its gestural content.

⁸ The respective *Maestoso* and *Largo* segments share a declamatory quality, the latter recitative-like. Beethoven perhaps encountered the practice of instrumental recitative in his youthful exposure (through Neefe) to the music of C.P.E. Bach, a composer venerated by the First Viennese School. (See the recitative in the *Andante* of Bach's “Prussian” Sonata No. 1.)

⁹ On p. 299 Hepokoski and Darcy include, under “Variants and Later Deformations of the ‘Slow’ Introduction,” Beethoven's Piano Sonatas Op. 31, No.2, and Op. 109, plus the String Quartet, Op. 130, all of which exemplify “false start” sonatas (Hepokoski and Darcy 2006, 614).

¹⁰ See Chua's Examples 6.10 and 6.14, pages 215 and 218 respectively. For instance, he beams the Cello's G-E flat-C-A-F in measures 8-9 and their continuation in Violin 1's D-B flat-B-E flat-C-A, measures 14-16.

¹¹ Harmonicity is a perceptual phenomenon, whereby one hears chords comprising a simple harmonic relation (e.g., an octave) as emanating from one acoustic source, versus chords of complex relation (e.g., a seventh) emanating from separate sources (Deutsch ed. 1999, 302).

¹² The fact that A4 caps a complete D major triad measure (99) further establishes D (III) as temporary tonic, which then launches a progression of falling fifths back to the recap in 132.

¹³ In the score, Carter brackets these pitches, proscribing keyboard performance “if harmonics are audible.” This applies to the remaining dyads as well.

¹⁴ At least four other factors affirm A sharp as tonic polarity. A sharp: (1) closes the first *Maestoso*, (2) opens the second *Maestoso*, (3) opens the second *Scorrevole*, and (4) morphs into the B flat unison ending the movement.

¹⁵ His reading is affirmed in two recent sources (Lockwood 2008, 198) and (Kinderman 2006, 296).

¹⁶ The introductions to the fugues in Beethoven's Op. 133 and in the Carter both start with fragmented versions of their respective fugue subjects.

¹⁷ Rosen further explores *la grand ligne* in Marc Ponthus and Susan Tang (eds.), 2008, 59-64.

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