The Roles of Invariance and Analogy in the Linear Design of Stravinsky's "Musick to heare"[*]

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In the 1950s and '60s, after Stravinsky had begun to integrate serial procedures into his compositional techniques, his approach evolved from piece to piece. Here I use the word "evolved" in a Darwinian sense. As the compositional environments changed (i.e., as new pieces were composed), there appeared new techniques (which emerged largely from an accumulation of changes in past techniques). The techniques that flourished were those best suited to the new artistic climates—those most amenable to the tasks at hand. As such, they should be appreciated in their own terms. Yet there is sometimes a tendency to look beyond the work under discussion, to subsequent, more "mature" works; and to describe the earlier work in terms of how it allegedly prefigured those that followed.[1] Setting Darwin aside, some writers seem to evoke the evolutionary views of Jean-Baptiste Lamarck, and view compositional changes as points along a

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[*] This essay traces its origins to a series of papers presented in constantly evolving forms in 1995, under two different titles: "First in a Series: Nested Structures and Invariant Design in Stravinsky's 'Musick to heare'" and "Invariance and Analogy as Compositional Determinants in Stravinsky's Early Serial Music" (the former presented in February at the South-Central Society for Music Theory [Baton Rouge, Louisiana], in March at Music Theory Southeast [Salisbury, North Carolina], and in April at the Rocky Mountain Society for Music Theory [Provo, Utah]; and the latter presented in October at the New Music and Art Festival of the MidAmerican Center for Contemporary Music [Bowling Green, Ohio]). In its current form, the essay is dedicated to John Covach, who was both helpful with and encouraging of those earlier efforts.

[1] Consider, for example, Ethan Haimo's monograph, *Schoenberg's Serial Odyssey: The Evolution of His Twelve-Tone Method, 1914–1928* (New York: Oxford University Press, 1990). Although Haimo's understanding and distillation of a large and complicated corpus of music is laudable, some reviewers have criticized his particular approach: "to trace the precedents for each [serial] technique and show how a 'mature style' defined by these techniques comes gradually into being." That is, "the compositional goal is defined before hand so that we can proceed to trace out the trajectory toward that goal" (Michael Cherlin, review of *Schoenberg's Serial Odyssey*, *Music Theory Spectrum* 14/1 [1992], 109). Haimo begins with a consideration of Schoenberg's late works and then, in their terms, proceeds to interpret earlier works. But why, it has been asked, should "works not yet created form the only relevant context"? In this way, one neglects the differences among works, in aesthetic effect and aspiration. "Chronology becomes a railroad track," leading resolutely toward late and "mature" works from earlier works that—by implication—are immature or jejune (Martha Hyde, review of *Schoenberg's Serial Odyssey*, *Journal of Music Theory* 37/1 [1993], 157 and 158).

"march of progress" toward better or more perfect works.[2] For example, an implicitly teleological view of Stravinsky's serialism is expressed by Milton Babbitt when he writes:

> From the *Cantata* [1952] to *In Memoriam* [*Dylan Thomas* (1954)] is but a two-year span, in which the serial unit has been reduced in pitch content, pitch duplication has been eliminated, and the serial unit has been made to supply every pitch element of the work. The next composition, the *Canticum Sacrum* [1955], is, in large part, a twelve-tone composition.[3]

Here the presumed compositional aspiration was to work toward using a twelve-tone series, from which all pc materials could be derived; and Stravinsky, it seems, had found himself at the borders of this serial Promised Land after just two years of wandering in a non-dodecaphonic desert.

Indeed, if one canvasses writings about Stravinsky's serial works, from the *Cantata* (1952) through *Requiem Canticles* (1966), one can find serviceable epigraphs to indicate the milestones Stravinsky passed along his route. For example, *In Memoriam Dylan Thomas* (1954) has been called his "initial endeavor in total pitch serialization."[4] *Canticum Sacrum* (1955) has been designated his "first completed work to make use of twelve-tone procedures."[5] *Threni* (1958) has been called "his first completely twelve-tone work."[6] *Movements for Piano and Orchestra* (1959) has been cited as the work in which "the technique of hexachordal rotation . . .

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[2] Lamarck (1744–1829) held that successive organisms become ever more complex and ascend to higher levels of existence. Thus, evolution is driven not by natural selection but by an idealized perfecting principle. I have explored the Darwinian (as opposed to Lamarckian) evolutionary analogy in more detail in "Stravinsky's Serialism and Musical Evolution: Tinkering, Preadaptation, and Non-Teleological Change," a paper presented June 2007 at the conference on "Music and Evolutionary Thought" (Durham University, United Kingdom).

[3] Milton Babbitt, "Remarks on the Recent Stravinsky," *Perspectives of New Music* 2/2 (1964), 45. Here and throughout, composition dates reflect the year a work was completed.

[4] Robert Gauldin and Warren Benson, "Structure and Numerology in Stravinsky's *In Memoriam Dylan Thomas*," *Perspectives of New Music* 23/2 (1985), 166.

[5] Charles Paul Wolterink, "Harmonic Structure and Organization in the Early Serial Works of Igor Stravinsky, 1952–57" (Ph.D. dissertation, Stanford University, 1979), 189. More specifically, Babbitt has cited the second movement of *Canticum Sacrum* ("Surge, aquilo") as "the first twelve-tone movement written by Stravinsky," i.e., one in which "all of the parts . . . are twelve-tone determined" (Babbitt, "Remarks on the Recent Stravinsky," 47).

[6] Babbitt, "Remarks on the Recent Stravinsky," 50.

first appears."[7] And the narrative continues to unfold similarly for the remaining major works, in what Joseph Straus has summarized as "a succession of compositional firsts."[8] As for the *earliest* serial works, writers have sometimes characterized them with potentially dismissive terms such as "proto-serial."[9] Although it may not have been their intention, by describing these works in this way, writers have implicitly depicted them as having "not yet arrived" at some *a priori* level of compositional "maturity," and it is difficult not to interpret such a suggestion negatively.

"Musick to heare," the first movement of *Three Songs from William Shakespeare* (1953), might be described in a manner akin to the prior comments. If one were interested in plugging the work into a preset teleological narrative, one might write the following:

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[7] Wolterink, "Harmonic Structure and Organization," 85.

[8] In describing Stravinsky's serial works as consisting of "a succession of compositional firsts," Straus characterizes them more in terms of the composer's persistent "pattern of innovation," whereby he was always "try[ing] something new," with the result being works "highly individuated from each other" (Straus, "Stravinsky's Serial 'Mistakes,'" *Journal of Musicology* 17/ 2 [1999], 231–32). Nonetheless, out of context, portions of Straus's narrative hint at the teleology of which I am speaking, as his cited "firsts" include Stravinsky's "first works to use a series (*Cantata* [1952], *Septet* [1953], *Three Songs from William Shakespeare* [1954]); his first fully serial work (*In Memoriam Dylan Thomas* [1954]); his first work to use a twelve-tone series (*Agon* [1957]); his first work to include a complete twelve-tone movement ("Surge, aquilo," from *Canticum Sacrum* [1956]); his first completely twelve-tone work (*Threni* [1958]); his first work to make use of twelve-tone arrays based on hexachordal rotation (*Movements* [1959]); his first work to use the verticals of his rotational arrays (*A Sermon, A Narrative, and A Prayer* [1961]); his first work to rotate the series as a whole (*Variations* [1965]); his first work to rotate the tetrachords of the series (*Introitus* [1965]); and his first work to use two different series in conjunction (*Requiem Canticles* [1966]—his last major work)" (ibid.). A more concise overview of "firsts" is offered by Lynne Rogers, who writes that Stravinsky "began experimenting with serial procedures as early as the *Cantata* (1951–2); composed his first completely serial but not dodecaphonic score, *In Memoriam Dylan Thomas*, by 1954; completed his first fully dodecaphonic work, *Threni*, in 1958; and introduced transposed and rotated hexachords, one of the trademark techniques of his mature [!] style, in the famously complex *Movements* of 1958–9" (Rogers, "A Serial Passage of Diatonic Ancestry in Stravinsky's *The Flood*," *Journal of the Royal Musical Association* 129/2 [2004], 237).

[9] For example, Robin Maconie refers to "the proto-serial *In Memoriam Dylan Thomas*" ("Stravinsky's Final Cadence," *Tempo* 103 [1972], 21); and Stephen Walsh refers to "proto-serial works like 'Musick to heare' and *In Memoriam Dylan Thomas*" (*The Music of Stravinsky* [New York: Routledge, 1988], 285, n. 17). Joseph Straus also refers to *Agon* as "proto-serial" ("A Principle of Voice Leading in the Music of Stravinsky," *Music Theory Spectrum* 4 [1982], 124), although he had previously differentiated "serial and proto-serial" sections of the same work (115). Walsh retains the term in his entry on Stravinsky for *Grove Music Online*, in the heading for section 9: "The proto-serial works, 1951–9" ("Stravinsky, Igor," *Grove Music Online*, http://www.oxfordmusiconline.com/subscriber/ article/grove/music/52818 [accessed June 15, 2008]). The header suggests that all music in the eight-year span is "proto-serial," although in the body of the section the term is used just once, to refer to the *Cantata*'s "one item of proto-serialism."

> Robert Craft suggested to Stravinsky a setting of Shakespeare's eighth sonnet, "Musick to heare," on July 5, 1953. On July 16, the composer showed him the completed song.[10] Despite its short gestation period, the work is distinctive in many ways and marks an important turning point in Stravinsky's serial development. Although *In Memoriam Dylan Thomas* (1954) has been called his "initial endeavor in total pitch serialization,"[11] the earlier "Musick" is a close contender for the same title, as it represents the first time he used a series of non-repetitive pcs as the primary basis of pitch derivation throughout a movement. For the first time in his oeuvre, all voices are entirely derived from transformations of a single row. The only aberrance is a C-major scalar segment that is repeated beneath the serial melody at the beginning and ending.[12]

The problem with the preceding description is that it deems the work "important" due to its connection to pieces that are yet to be written. Attributes that do not portend those of later works—in this case, the C-major scalar segment—are dismissed as "aberrant" (if not left out of the discussion altogether).

In contrast, the results can be more rewarding if we interpret the song in its own terms, focusing inter-opus remarks primarily on relevant connections with *prior* works, as this will demonstrate pertinent continuities rather than hypothetical foreshadowings. (Later works may also be considered in light of these continuities, as long as one does not idealize them as end-goals, such that changes to otherwise similar compositional processes are interpreted as rectifications or improvements.) Such an approach reveals "Musick" to be more than just "a

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[10] Robert Craft, *A Stravinsky Scrapbook: 1940–1971* (New York: Thames and Hudson, 1983), 40. All three songs were finished by October 23, 1953, which is the date of a letter sent by Stravinsky to Ernst Roth (the managing director of his publisher, Boosey and Hawkes) in which he stated that he had "just completed" the set (*Stravinsky: Selected Correspondence*, vol. 3, ed. Robert Craft [New York: Alfred A. Knopf, 1985], 378). However, on November 16, Craft informed Stravinsky that the latter "had omitted a word from the sonnet [i.e., 'Musick to heare'], as well as two lines from the [third] song, 'When Daisies Pied'—oversights that he quickly repaired" (Craft, *A Stravinsky Scrapbook*, 40). On November 27, the "corrected cop[ies] of both full and vocal scores" were sent to the publisher (according to a letter of that date, from Stravinsky to Erwin Stein [editor at Boosey and Hawkes], in *Stravinsky: Selected Correspondence*, vol. 3, 379).

[11] Gauldin and Benson, "Structure and Numerology," 166.

[12] This paragraph is of my own devising. I have set it in block quotes to convey the sense that it is the description of a hypothetical writer of the stripe indicated, and not necessarily the kind of narrative preferred by the author.

further step along the road to full serial technique," as one writer characterized it.[13] It is no mere practice piece, written as Stravinsky was groping toward a better brand of serialism that was lying ahead, but instead a work with highly systemized serial designs. This "system," or set of (inferred) guidelines for the application of successive rowforms and the forging of larger units, is the focus of this essay. In the initial sections, I will demonstrate that *pc invariance*, strategically deployed, plays a crucial role in the song's linear design. Understanding the associations forged by invariance will permit a richer understanding of the song's architecture. There are also other elements of design, and in subsequent sections I will examine the most prominent of these and interpret their attributes in terms of work-specific *analogies*. By this I mean simply that some linear events are best explained by the ways in which they instantiate characteristics of other events in (or attributes of) the song. The ideas of invariance and analogy may also be interrelated; for example, when comparing different linear segments, similar networks of invariant pcs may provide a basis for positing analogies of form and structure. Thus, both of these concepts are integral to an appreciation of the song as a unique artwork.

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When Craft gave Stravinsky a copy of Shakespeare's sonnet, "Musick to heare," he suggested a setting for soprano, flute, harp, and guitar.[14] The composer's scoring differs slightly from the proposal: it is a quartet with (mezzo-)soprano and flute, but clarinet and viola complete the ensemble. The song consists of fifty measures in a mixture of 4/8 and 3/8 meters (the former being more frequent); at Stravinsky's notated tempo of eighth note = 69 bpm, it will have a

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[13] Neil Wenborn, *Stravinsky* (New York: Omnibus Press, 1999), 161. Wenborn was referring to the Shakespeare songs in general. Babbitt, on the other hand, was referring specifically to "Musick" when he similarly called it "a definitive step toward eventual twelve-tone composition" ("Remarks on the Recent Stravinsky," 44).

[14] Craft, *A Stravinsky Scrapbook*, 40. Craft notes that Stravinsky's wife was learning to play guitar at this time.

duration of approximately 2 minutes and 36 seconds. In the following commentary, I will refer to

its musical sections by the corresponding divisions of its text, as outlined in Figure 1: mm. 1–8 =

Introduction (instruments alone; no text); mm. 9–21 = *Quatrain I*; mm. 22–34 = *Quatrain II*;

mm. 35–43 = Q*uatrain III*; and mm. 44–50 = *Couplet* or simply *Conclusion* (which has musical

features in common with the Introduction).[15] References to the work's cadences will mean those

that conclude these five sections.

Figure 1: Form outline of "Musick to heare"

Under the "sonnet text" column, spelling, punctuation, and capitalization
are reproduced as they appear in the song.[16]

MEASURES	SECTION	SONNET TEXT
mm. 1–8	Introduction	[no text; instruments alone]
mm. 9–21	Quatrain I	Musick to heare, why hear'st thou musick sadly, Sweets with sweets warre not, joy delights in joy: Why lov'st thou that which thou receav'st not gladly Or else receav'st with pleasure, with pleasure* thine annoy?
mm. 22–34	Quatrain II	If the true concord of well tuned sounds, By Unions married do offend thine eare, They do but sweetly chide thee who confounds In singlenesse the part that thou should'st beare:
mm. 35–43	Quatrain III	Mark how one string, sweet husband to another, strikes each in each by mutual ordering; Resembling sier, and child, and happy mother, Who all in one, one pleasing note do sing:
mm. 44–50	Couplet [i.e., Conclusion]	Whose speechless song being many seeming one, sings this to thee thou single wilt prove none.

* repetition of "with pleasure" is not in Shakespeare's sonnet

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[15]   For the reader's convenience, the rehearsal (R) numbers in the full score correspond to the following measure numbers: R1 = m. 9, R2 = m. 14, R3 = m. 18, R4 = m. 22, R5 = m. 26, R6 = m. 30, R7 = m. 35, R8 = m. 39, and R9 = m. 44.

[16]   Regarding Stravinsky's source for the text, see n. 97 in Appendix 2.

Figure 2:
a. The primary series, M

adjacent ics: 4   2   1

b. The transpositions and inversions of M

T_0:	<E79T>	T_0I:	<1532>
T_1:	<08TE>	T_1I:	<2643>
T_2:	<19E0>	T_2I:	<3754>
T_3:	<2T01>	T_3I:	<4865>
T_4:	<3E12>	T_4I:	<5976>
T_5:	<4023>	T_5I:	<6T87>
T_6:	<5134>	T_6I:	<7E98>
T_7:	<6245>	T_7I:	<80T9>
T_8:	<7356>	T_8I:	<91ET>
T_9:	<8467>	T_9I:	<T20E>
T_{10}:	<9578>	$T_{10}I$:	<E310>
T_{11}:	<T689>	$T_{11}I$:	<0421>

The series and its applications in general.

Except at the Conclusion, the song consists of two-voice counterpoint, with one line given to the vocalist and the other divided among the three instrumentalists (suggesting, in Babbitt's words, "a monophonic instrument with varying timbral characteristics").[17] A diatonic scalar figure, corresponding to the first five notes of C major, is repeated as the lowest voice in the Introduction and Conclusion, contributing to a three-voice texture in the latter.[18] Otherwise, all pcs are derived from transformations of a four-element series that I will label M (for "Musick"). As shown in Figure 2a, M initially appears as <E79T>; it is a member of set class

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[17] Babbitt, "Remarks on the Recent Stravinsky," 44.

[18] There is also a brief instance in the Introduction (m. 6) where two tones are sustained while four sixteenth notes change, causing trichordal simultaneities.

4-2 (0124).[19] For future reference, Figure 2b lists all potential rowforms, with the initial one labeled T_0.

Given the major-scale referent in the Introduction and Conclusion, one might think of M (and its transpositions) as the first four pcs of a "major/minor" scale—that is, one with both major and minor thirds above the "tonic." This major/minor juxtaposition is reminiscent of occurrences in the composer's earlier works, and thus the intervallic structure of M lends the song a characteristic Stravinskian sound.[20] Indeed, this sound persisted in his serial works, where (0124) in particular remained a common constituent. For example, to cite compositions from only around the time of the Shakespeare songs: In the *Cantata* (1952), (0124) occurs as a segment of the serialized melody of "Ricercar II."[21] In the *Septet* (1953), the Gigue often has (0124) in its non-subject voices, as the tetrachord occurs three times in the unordered set on which they are based.[22] In *Agon*'s "Double Pas-de-Quatre" (a movement composed in 1954, after *In Memoriam Dylan Thomas*), (0124) occurs as the two conjunct tetrachords of a seven-pc series

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[19]   Throughout, set classes will be identified with their prime forms in parentheses. Pcs given in curly brackets denote *unordered* collections, and those given in angle brackets denote *ordered* sets (i.e., series). When an evenly spaced or compact format is preferred, T and E will represent pcs 10 and 11; otherwise they will be rendered in Arabic numerals.

[20]   Many have written about this characteristic sound; for example, see Pieter C. van den Toorn, *The Music of Igor Stravinsky* (New Haven: Yale University Press, 1983), especially p. 261ff. and chapter 10. For a more brief examination, see Joseph Straus's discussion of 3-3 (014)—the "major/minor third"—in *Oedipus Rex*, in Straus, *Remaking the Past: Musical Modernism and the Influence of the Tonal Tradition* (Cambridge, Massachusetts: Harvard University Press, 1990), 90–93.

[21]   It occurs as order positions 5–8 (as numbered from 0) in the prime form, which consists of eleven ordered notes but only six unique pcs: <40245<u>3240</u>2E>, where the underlined pcs represent (0124).

[22]   The Gigue consists of four parts: the first and third a fugue in the strings, and the second and fourth a double fugue of piano and winds. The fugue subjects are based on the pc sequence of the prior passacaglia theme, which consists of eight unique pcs. In the score, Stravinsky notates the unique pcs in scalar fashion above each subject entry and labels them as the instrument's "row." This is misleading, for although the subjects have an established order, it is unrelated to the scalar form; and although the non-subject portions employ only the eight pcs, they do so freely, treating them as an unordered source set. The set is a member of 8-14 (01245679); as notated in scalar form by Stravinsky, the three instances of (0124) appear as the first, last, and overlapping middle tetrachords. (E.g., the Gigue's first notated "row," above the viola, is <46789E01>, and the instances of (0124) are <4678>, <789E>, and <9E01>.) Non-subject portions of the score outnumber subject portions; and as Stravinsky draws from the set to create melodies for the former, (0124) occurs somewhat often. (There is no four-pc segment *within a subject* that would yield (0124); the set belongs exclusively to the *non-subject* portions.)

used in the second section.[23] And in the third and fourth movements of *Canticum Sacrum* (1955), (0124) occurs twice in the twelve-pc series, including as the opening tetrachord.[24] It is also notable that, after Stravinsky's work on the Shakespeare songs, he arranged some of his earlier (non-serial) songs under the title *Four Songs* (1954), for voice, flute, harp, and guitar—Craft's suggested instrumentation for "Musick." There the melody of the second song opens with pcs from the set {79TE}, which is precisely the content of M in its initial form.[25]

Concerning the manner in which M is applied linearly, a few general traits may be noted. In most instances, there is an alternation of prime and inverted forms; retrograde orderings are used only twice. There are frequent repetitions within row statements: single pcs may be reiterated successively several times, and two adjacent pcs may be repeated (in order) once or sometimes twice before the row continues, creating the melodic "stutter" for which Stravinsky is known.[26] Octave displacement, typical of Stravinsky's melodies, is prevalent throughout,

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[23] *Agon* was completed in 1957, but the "Double Pas-de-Quatre" was written in 1954. Its series <1235642> divides into overlapping instances of (0124): <1235> and the inversionally related <5642>. It is one of three short series used in the second section of the movement (mm. 81–95). For more details, see Susannah Tucker, "Stravinsky and His Sketches: The Composition of *Agon* and Other Serial Works of the 1950s" (Ph.D. dissertation, University of Oxford, 1992), 60–73.

[24] In the third movement ("Ad Tres Virtutes Hortationes"), the opening, unaccompanied organ series is <98T01E436257>, where the two underlined segments represent (0124). This form is related by RT$_n$I to that used elsewhere in the movement; but the organ's series reasserts itself in the fourth movement ("Brevis Motus Cantilenae"). With reference to Stravinsky's sketches, David Smyth has shown that the composer initially used a member of (0124) as a source tetrachord for the third movement's "Diliges" choral section (m. 116ff.; see Smyth, "Stravinsky's Second Crisis: Reading the Early Serial Sketches," *Perspectives of New Music* 37/2 [1999], 131–32). The series of the second movement ("Surge, aquilo") also features (0124): it is embedded twice, conjunctly, in <9E0T13462578>. It should be noted that (0124) remains conspicuous in Stravinsky's later twelve-tone rows, too, in which it appears as: (1) the first and last tetrachords of *A Sermon, A Narrative, and A Prayer* (1961); (2) the last tetrachord of *Abraham and Isaac* (1963); (3) the first and last tetrachords of *Fanfare for a New Theatre* (1964); (4) the last tetrachord of *Variations* (1964); and (5) the first tetrachord of the first series of *Requiem Canticles* (1966), and the last tetrachord of its second series.

[25] The second of the *Four Songs* originated in *Four Russian Songs* (1919) for voice and piano, no. 4, "Sektantskaya." {79TE} provides the content of mm. 1–4.

[26] Referring to the repeated alternation of two notes a whole-step apart in his *Elegy for J.F.K.* (1964), Stravinsky called such occurrences "a melodic-rhythmic stutter characteristic of my [musical] speech from *Les Noces* [1923] to the *Concerto in D* [1946], and earlier and later as well—a lifelong affliction, in fact" (Stravinsky and Robert Craft, *Themes and Episodes* [New York: Alfred A. Knopf, 1966], 58; the *Elegy* fragment, which he quoted at the pitch level originally conceived, corresponds to the D4–E4 alternation of m. 14). If we assume Stravinsky was referring to

especially in the instrumental parts, where leaps of thirteen to sixteen semitones are common and even twenty semitones are traversed.[27] The final pc of a row does not always coincide with phrase endings and cadences. However, in the instrumental (i.e., non-vocal) parts, the rows are usually assigned to *different* instruments and are *successive* (as opposed to overlapping), thereby distinguishing their presentation.[28] Even on the few occasions when instrumental parts do overlap, no new pcs are sounded simultaneously; instead, pcs are doubled, which either creates a smoother connection of line and timbre or, on two occasions, results from two instruments articulating the same row concurrently.

The ic adjacencies of M are 4, 2, and 1; and these ics characterize both contrapuntal lines in their entirety. Although each line is constructed of successive series forms, Stravinsky could have interjected different ics as the connecting nodes between them. Instead, he uses almost exclusively ics 1 and 2 (especially the latter). Other than a solitary ic 5, which occurs as part of a cadence apparently intended to mimic tonal function,[29] the only deviations from this consistency come in the form of rare occurrences of ic 3: one in the voice and three in the instruments.[30]

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only the oscillation of two notes separated by a "step" (i.e., in the conventional sense of unordered pitch interval 1 or 2), we do not find much "stuttering" in the present song. (This is the definition of the "stutter" given in Joseph Straus, *Stravinsky's Late Music* [New York: Cambridge University Press, 2001], 86, n. 5; see also 228.) However, there is no reason to be so constrained. For example, allowing for steps with octave displacement (i.e., defining the stutter as the repetition of two notes related by ic 1 or ic 2), we find several instances in the instrumental line—e.g., the repeated <21> of mm. 12–13 (viola), which is followed by the repeated <12> of m. 15 (flute). Moreover, dyads of other ic qualities are stuttered.

[27] See, e.g., F♯5–A♯3 in m. 25 (clarinet), and E5–G♯3 in m. 28 (viola).

[28] This is true except at the Introduction and Conclusion, where the flute has the series while the clarinet and viola contribute to the C-major pentachord.

[29] The melodic ic 5 occurs in m. 43 as the connecting node between the clarinet's T_9 <8467> and the flute's T_1I <2643>. The flute doubles the last two pcs of T_9 before beginning its own row, and so the ic 5 is delivered by a single instrument and becomes more perceptible. This particular ic 5, formed by {G,D}, is also the simultaneity of the cadence (the clarinet continues G3 as the flute ascends to D5). The C-major pentachord returns immediately afterward, at the Conclusion. The harmonic and melodic use of {G,D} immediately before the return of the C-major referent mimics the V–I function of tonal music.

[30] In the vocal line, another ic 3 occurs not *between* rows but *within* a row, due to a series deviation that may reflect the corresponding text (as discussed in Appendix 2).

Melodic ic 3s are therefore distinctive events to which the ear is drawn because of their novelty. They tend to occur at special moments, as when they demarcate formal sections. One, in the flute, separates the Introduction from the start of Quatrain I; another, in the vocal part, occupies a parallel location between Quatrain III and the Conclusion.[31] The beginning of Quatrain II is also announced by an instrumental ic 3, between the clarinet and the viola.[32]

Linear relations among series forms.

In both contrapuntal lines, there are segments containing a variety of nested relations. It is particularly revealing to consider the opening flute melody, the pc sequence of which is immediately repeated as that of the opening vocal melody. The pcs have been compactly assigned to a staff in Figure 3a, where related segments of various sizes are labeled.[33]

Twelve-element segments. Notice that the relations found in rows 1–3 are preserved in rows 4–6: $T_{10}I$ transforms the former into the latter. Alternatively, one could say that the last twelve pcs are derived from the first twelve by inversion about the same initial pc. Thus, four-element rows are combined into a twelve-element unit that is transformed itself. The twelve-element unit recurs in various transposed and inverted forms, and will be examined more thoroughly when I discuss categories of row connections.

Eight-element segments. Observe that rows 5–6 are the same as rows 1–2 at T_3, and that rows 4–5 are a transposition of rows 2–3 by this same interval. Rows 2–3 are related to rows 1–2 by T_7I, and therefore the relation also holds for rows 5–6 and 4–5. Various transformations of

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[31] The flute's ic 3 occurs between pc 0 in mm. 7–8, and pc 3 in m. 9; the voice's ic 3 occurs between pc 2 in mm. 42–43, and pc 11 in m. 44.

[32] It occurs between the clarinet's pc 7 in m. 21, and the viola's pc 4 in m. 23.

[33] In his synopsis of the song, George Perle also cites this opening and refers to linear rowform combinations that forge larger, "quasi-serial formations" (Perle, *Serial Composition and Atonality: An Introduction to the Music of Schoenberg, Berg, and Webern*, revised 6th ed. [Berkeley: University of California Press, 1991], 56).

Figure 3: Pc succession in flute, mm. 1–8
a. Four-, eight, and twelve-element relations

b. Elided serial and "non-serial" tetrachords, each with the same BIP

* denotes "non-serial" tetrachords

these eight-element segments occur throughout the song, both autonomously and as part of the twelve-element groupings.

Four-element segments. In addition to the series itself, there is further coherence on the tetrachordal level: as shown in Figure 3b, pairs of serial tetrachords are interlocked with "non-serial" (i.e., otherwise-ordered) tetrachords of the same set class. These overlapping units have exactly the same pc content: that is, a non-serial T_7I imbricates a serial T_7I, and so forth. Each of these units also has the same basic interval pattern or BIP, {124}, about which more later.[34]

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[34] A BIP is a listing of an ordered set's adjacent ics, in numerical order. For example, in Figure 3b, the first two overlapped tetrachords are <E79T> and <9T80>. Their adjacent-ic successions are 4–2–1 and 1–2–4 (respectively). As they both consist of the same three ics, in the same frequency (one of each), they are said to have the same BIP, which is placed in ascending order for better comparison: {124}. The interlocking BIPs of Figure 3b's melodic segment are also diagrammed in Allen Forte, *The Structure of Atonal Music* (New Haven: Yale University Press, 1973), 73. A more comprehensive treatment of BIPs is offered in Forte, "The Basic Interval Patterns," *Journal of Music Theory* 17/2 (1973): 234–72.

Figure 4:
a. Pc succession in flute, mm. 1–4: three- and six-element relations

b. Other, "less distinct" trichordal retrogrades (actual pitches shown)

Three-element segments. As labeled in Figure 4a, the initial two trichords are members of set class 3-6 (024). More significant, the second appears as a transposed retrograde of the first, both rhythmically and in pitch-space; i.e., m. 2 reverses the sequence of durations and ordered pitch intervals given in m. 1. Several writers have drawn special attention to this feature, including Babbitt, who called the application of retrograde to a trichord a "characteristically Webernian" device.[35] Due to phrasing and the distinctive melodic contour, the trichordal relation is certainly prominent at the outset. But although these adjacent trichords recur (as follows from

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[35] Babbitt, "Remarks on the Recent Stravinsky," 50. Herbert Eimert and Roman Vlad had commented earlier on the Webern-like trichordal relation, as discussed in Appendix 1.

the previous observation that the opening eight- and twelve-element segments are replicated), their emphasis diminishes after the beginning because the retrograde is not always so pronounced. As a comparison of Figures 4a and 4b will demonstrate, in many instances, changes in contour cause the retrograde to be perceived only in terms of general ic succession. Furthermore, when the trichords are embedded *within* phrases, instead of demarcating them, they often sound less directly related.

Six-element segments. Finally, Babbitt has also focused on a six-element segment, noting that a chromatic hexachord (i.e., 6-1 (012345)) is formed by the initial two retrograde-related trichords; the six pcs that follow are redundant (see again Figure 4a).[36] This chromatic segment recurs in transformations throughout the song (as it is embedded in larger recurring segments). However, it is not a consistent feature. Sometimes two successive rowforms do not produce a chromatic hexachord, or even six different pcs.

Possible rationales for series choices.

Considering the related segments of various sizes that have been defined in just the opening measures, we can understand why some early commentators disagreed over the cardinality of the row on which the song was based (several claiming that it consisted of twelve elements, perhaps with other embedded relations; these analyses are further discussed in Appendix 1). Each segment adds another layer of cohesiveness to the melodic design; each has significance to some degree and thus might be heard as referential.[37] Still, without a doubt, the

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[36] Babbitt, "Remarks on the Recent Stravinsky," 50.

[37] The word "referential" is key here; one could be aware of the four-note series and still choose to focus on another segment. For example, in a more recent analysis of the song, William H. Richards "adopts the analytic position that the [(0124)] unit is not [the] series," but rather "the primitive of several symmetrical linear formations" (Richards, "Transformation and Generic Interaction in the Early Serial Music of Igor Stravinsky" [Ph.D. dissertation, University of Western Ontario, 2003], 186). He considers the first *twenty-four* pcs of the flute to be

four-pc row is the real atomic unit; it alone is consistently applied. To discern the principles that guided the song's linear construction, we must consider traits exhibited by successive tetrachords and generalize their associations. Based on the prior observations, pc invariance (as shown in Figure 3) and chromatic completion (as suggested by the hexachords) are two possible determinants of row succession.[38]

Because serial design is often described in terms of chromatic completion (i.e., systematically circulating the aggregate), I will address this possibility first. In his brief observations on the song, Babbitt credits chromaticism as the impetus for the second row's transformation: "The first statement of the [series] is followed by an inversion at a transpositional level *selected so that a [chromatic] hexachord is formed*" by the original series

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song's "object-theme or theme," terms he employs instead of "prime ordering" so as to invoke the spatial-geometric analogy presented elsewhere in his dissertation (187, main text and n. 4).

[38] In the following, as I focus on attributes of *linear* design, I am not suggesting that the *contrapuntal* interaction of the lines is insignificant; but (in the present case) I do hold it to be secondary. That is, I am assuming the linear design to have been a primary, systematic motivator in the compositional process, and the specific juxtaposition of the two lines to have been determined afterward. This does not mean that the contrapuntal alignment is arbitrary (indeed, it is methodical too). However, given two lines to be juxtaposed (the ordered content of which came first), Stravinsky was able to alter their relative rhythmic placement—and thus sculpt the counterpoint—as he saw fit. As for his contrapuntal or "vertical" preferences, their ic qualities are actually in opposition to those of the serial lines. If the dyadic simultaneities of the two-voice counterpoint are considered in terms of their percentages of occurrence, then they increase as the ic becomes larger; that is, ascending from ic 1 to ic 5, the percentages are 10-10-18-22-34. Thus, in conventional tonal terms, thirds/sixths and especially perfect fourths/fifths are the primary contrapuntal intervals. (And of the ic-5 representatives, the perfect fifth is privileged over the perfect fourth by a ratio of about 7:4.) In contrast, the ic vector of the row's set class *decreases* as the ics becomes larger; from ic 1 to ic 5, its tallies are 2-2-1-1-0. (Ic 6 is suppressed in both the counterpoint, with 6% occurrence, and the ic vector, with zero occurrences; hence the reason the preceding comments are based only on ics 1 through 5. Stravinsky's characteristic suppression of ic 6, in both rows and serial harmonies, has been attested to by Wolterink, "Harmonic Structure and Organization," 53 and Table 3-2 (92); see also the present essay, n. 49.) The differentiation of the vertical and the horizontal persists into the trichordal harmonies at the Conclusion, just over half of which contain ic 5. There, set class 3-3 (014) occurs most; it is a subset of the row's set class, 4-2 (0124), as well as the very Stravinskian "major/minor third" sonority. But the other trichordal subsets of (0124) (i.e., 3-1 (012), 3-2 (013), and 3-6 (024)) are among the least represented, with 3-2 (013) being the only trichord not present at all. Such differentiation of the melodic and harmonic domains is common in Stravinsky's serial works. Making a virtue of the circumstance, Babbitt has described the intervallic structures of Stravinsky's simultaneities as "complementing" those of his rows by providing the intervals they lack. Babbitt has even compared this with the differentiation of the vertical and horizontal components in tonal music, the former based on the triad and the latter based on the scale. (See comments in Babbitt, "Order, Symmetry, and Centricity," in *Confronting Stravinsky: Man, Musician, and Modernist*, ed. Jann Pasler [Berkeley: University of California Press, 1986], 254; and Babbitt, "Remarks on the Recent Stravinsky," 42–43.)

"and the first two notes of the inversion."[39] Of course, we cannot conclusively know the reasoning that passed through Stravinsky's mind as he selected the second series form. But what is clear from his score is that chromatic completion plays *no* significant role in the work's pc design. Not only does one-third of the song pass before all twelve pcs are sounded, but none of the moments of aggregate completion (of which there are only five) coincide with musical phrases or poetic divisions.[40] Admirer of Webern though he was, Stravinsky clearly ignored the former composer's edict that the "most important thing" is for "each 'run' of twelve notes [to mark] a division within the piece, idea, or theme."[41] Quite the opposite; the aggregate is *not* an important organizing device in this work—nor, generally speaking, in other serial works by Stravinsky.[42] Thus, to focus on chromatic completion is not to interpret occurrences in one work

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[39] Babbitt, "Remarks on the Recent Stravinsky," 44; italics added. Christoph Neidhöfer also privileges the role of chromaticism in the song's serial design, writing that "the various series are most likely arranged as to form chromatic hexachords with each other," and that the series "is mostly combined with transformations of itself as to project fully chromatic hexachords" (Neidhöfer, "An Approach to Interrelating Counterpoint and Serialism in the Music of Igor Stravinsky, Focusing on the Principal Diatonic Works of His Transitional Period" [Ph.D. dissertation, Harvard University, 1999], 162 and 170). His Figure 7-4 (164) shows the rowforms used in the song, with horizontal lines connecting those "that together form chromatic hexachords" (164); the figure illustrates that such chromatic relations "abound in the movement" (165). This is true, although the same rowform successions can be explained with the models of invariance I will propose and argue to be preferable.

[40] The rate of aggregate completion is rather erratic. Measured in terms of eighth-note beats, the first aggregate takes 61 beats to complete; the second takes 9; the third 73; and the forth and fifth, 15 and 14 (respectively). The piece ends before the sixth aggregate is complete. (These calculations are based on the serial lines only, and do not consider the C-major pentachord at the beginning and ending. But even its inclusion would change only the completion of the first two aggregates, bringing them to a close after 58 and 12 beats, respectively.)

[41] Anton Webern, *The Path to the New Music*, ed. Willi Reich and trans. Leo Black (London: Universal Edition, 1960), 51.

[42] Babbitt points out a possible exception in Stravinsky's music, where hexachordal inversional combinatoriality is present. (This is a procedure usually associated with Schoenberg, in which a twelve-tone row can be segmented into two hexachords related to one another by T_nI. Thus, the complete row may be combined with a T_nI form of itself, such that the first hexachords of each row complete the aggregate, as do the second hexachords.) Babbitt refers to this feature in Stravinsky's *Canticum Sacrum* (1955), third movement ("Ad Tres Virtutes Hortationes"), and suggests that the usage is an intentional consummation of longer-range hexachordal processes. Here "each hexachord of a set form can be content identified with either hexachord of another set form; such identification is explicitly presented compositionally at the end of the third movement in the trumpet duet, where corresponding hexachords of inversionally related forms are so related in total content. . . . This pitch identification between hexachords can be termed, more than metaphorically, a cadential resolution, for it is the final stage in a succession of juxtapositions of hexachords, beginning with a pair which is disjunct in pitch content and proceeding through set pairs with varying degrees of pitch identification" (Babbitt, "Remarks on the Recent Stravinsky," 49). Whatever the merits of this interpretation, as Joseph Straus has pointed out, "an interest in aggregates generally, and in

in terms of the attributes of future works (the method critiqued at the outset of this essay), but instead to interpret the work of one composer in terms of the practices of a totally different composer.

Consider now the other option for rowform selection: pc *invariance* among contiguous tetrachords. Many of the nested relations shown in Figure 3 arise from repetition. Not only are rows repeated, there is pc duplication among adjacent (non-repeated) rows: in each of the twelve-pc combinations, the outer tetrachords are identical, and an invariant dyad is maintained in each. This repetition is what leads to structures such as the elided ordered and unordered sets. Moreover, similar patterns continue throughout the song (as we will see). Thus, returning to the second rowform, it is contextually more relevant to propose that it was selected so that there would be dyadic invariance among contiguous tetrachords.

An interpretation based on pc invariance is in accordance with what we know of Stravinsky's compositional mannerisms in general; a delay of pc change is idiomatic. For example, static harmony is a hallmark of much of his oeuvre, whether it is the result of his modular or "block" designs, as in *Three Pieces for String Quartet* (1914) and *Symphonies of Wind Instruments* (1920); or the result of the repetitive pitch layers of his ostinati, as in *Les noces* (1923) and the *Symphony of Psalms* (1930). His melodies especially demonstrate a predilection for repeated groups of pitches. Among the pre-serial works, this is evidenced by the melody of the "Mystic Circle of the Young Girls," from *The Rite of Spring* (1913), which is initially fashioned from the set {E146}; by the principal melody (i.e., the first violin part) of the opening movement of *Three Pieces for String Quartet* (1914), which consists entirely of {0E97}; by the

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hexachordal combinatoriality specifically, are not characteristic of Stravinsky's serial music" (Straus, "Stravinsky's 'Construction of Twelve Verticals': An Aspect of Harmony in the Serial Music," *Music Theory Spectrum* 21/1 [1999], 72, n. 28).

soprano solo at the beginning of *Les noces* (1923), which employs {642E}; and by the variation

theme of the *Octet for Wind Instruments* (1923), which begins with variations on {9T01}.[43] Then

there's the jocular melody of the *Circus Polka* (1942) which, for the first several measures,

cavorts with only the three pcs of the E-major triad.

The preference for pc repetitions persisted in Stravinsky's non-dodecaphonic serial

compositions. In the *Cantata* (1952) and *Septet* (1953), the series themselves have internal pc

repetitions. Moreover, rowforms used in close proximity to one another may be mostly or

entirely identical in terms of pc content. For example, in the *Cantata*'s "Ricercar II," two series

forms that are often presented successively are T_0 <4024532402E> and T_4I <0420E120425>.

These differ in just one of their six unique pcs (which is the maximum intersection possible for

two rows of this set class).[44] In the second of the Shakespeare songs, "Full fadom five," two of

the main rowforms have *complete* intersection: T_0 <3165TE8> and RT_4I <856ET31>.[45] Again,

these are presented in close proximity melodically and harmonically. Repeated pcs remain a

common feature of contiguous series forms in the subsequent *In Memoriam Dylan Thomas*

(1954), which has a five-pc series; and in "Musick" they provide a basis for particularly

systemized series applications, as I will explain.

Before proceeding, I must address what might be interpreted as a competing motivation

for row selection: the previously mentioned intervallic consistency of the melodic lines. Allen

Forte has shown that, in the vocal line, many (overlapping) tetrachords form the interlocking BIP

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[43] For the four cited pc sets, the set-class membership is (respectively): 4-23 (0257), 4-11 (0135), 4-22 (0247), and 4-3 (0134).

[44] That is, the row's set class, 6-z3 (012356), cannot transpose or invert onto itself.

[45] A different ordering is used in the vocal melody at the beginning and ending, but the voice in mm. 2–3 presents the series on which most of the song is based: T_0 <3165TE8>. RT_4I <856ET31>, first encountered vocally in mm. 10–11, corresponds to Stravinsky's favored "IR" (as opposed to "RI") form, where inversion is around the axis of the retrograde's initial pc.

{124}.[46] As illustrated in Figure 3b, these overlapping tetrachords are frequently of the same set class and even pc content as the actual series statements they connect. However, this is not always the case, as BIP {124} is not exclusive to set class 4-2 (0124); it is associated with *nine* set classes of cardinality four.[47] For example, when the vocal line in mm. 40–43 has the row succession <T20E>–<1532>, there are overlapping instances of {124}; but the middle pcs, <0E15>, are a member of 4-5 (0126). Overlapping instances of {124} are prevalent because ic 2 is the most frequent connecting node between contiguous rowforms; it is used in roughly 60% of the connections overall (and in roughly 70% of the connections in the vocal line). Ic 0—that is, pc repetition—ranks a distant second. Under the standard serial operators (T_n, T_nI, and R), a row will either begin with ic 4 and end with ic 1, or vice-versa. As long as retrograde and non-retrograde forms are not connected as a pair—as they rarely are in the song and *never* are in the vocal line—{14} will always be two-thirds of the series-overlapping BIP. Because ic 2 is usually the connecting node, overlapping instances of {124} are typical. Still, most of these occurrences may be subsumed ultimately under the rubric of invariance. That is, the connecting ic 2 could have been directed either way (e.g., from pc 0 to 2, or from 0 to 10); but, as will be demonstrated, the *particular* ic-2 connection favored by Stravinsky is related to pc invariance.

Relation classes for adjacent series forms.

      Having noted the general prominence of pc invariance among adjacent rowforms, I will now address the *specific* kinds of invariances Stravinsky preferred in "Musick." Considering all T_n and T_nI forms (and their retrogrades), there are sixteen possible row transformations that

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[46] Forte, *The Structure of Atonal Music*, 72–73; see also n. 34 of the present essay.
[47] Likewise, set class 4-2 (0124) can produce several different BIPs—eight in all.

share at least one pc. Thus, if Stravinsky's motivation was only to select adjacent rows with *some* (i.e., at least minimal) pc invariance, there would be 120 adjacency combinations (row pairs) possible. Of course, the song is too short to circulate through all of these permutations; in both lines combined, only fifty-two pairings can be counted.[48] But more to the point, only twenty-six of these are unique in terms of their ordered pc content, revealing Stravinsky's fondness for drawing rows from a more select pool. These combinations can be further reduced to a small set of genera based on the nature of their pc duplications. Within each line, as the composer assigns one row and decides on the next, he seems to be making selections primarily from five relation classes, with definite priority given to the first. Categorizing these not only gives us insight into his (hypothetical) general guidelines for row connection, but it can help us discern segment relations and other aspects of linear design that otherwise might not be evident. In the following, I will describe these connection categories in descending order of occurrence.

(1) Second-dyad invariance. The two twelve-element segments of the opening flute melody (Figure 3) provide a model for the most prevalent serial relation. It involves creating a unit, Z, of two ordered tetrachords, A and B, each having the same pcs in their last two positions (whichever way the two pcs may be ordered). If B is followed by a tetrachord that again includes this similarly positioned subset, the result is a repetition of A (as only A and B include these pcs in these positions). Thus, Z may at times consist of ABA, in which case the pattern of dyads will be <abcbab>. There is no way to maintain an invariant dyad under transposition alone, as the row contains no ic-6 adjacencies (an absence characteristic of Stravinsky's rows).[49] However,

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[48] There are twenty-four in the voice and twenty-eight in the instrumental accompaniment; this does not include the two simultaneous repetitions in the instrumental line.

[49] Wolterink ("Harmonic Structure and Organization," Table 3-2, p. 92) calculates ic-6 adjacencies to be *never* used in Stravinsky's "non-twelve-tone rows" and *least* used in his "twelve-tone rows" (where Wolterink's tallies place its percentage share at ca. 3.6%).

dyadic content can be maintained under T_nI. The pcs x and y will map onto each other at the inversional index x + y. Accordingly, the transformations that will create a multi-row segment with second-dyad invariance may be represented: $T_n–T_{(s–n)}I–(T_n)$ or $T_nI–T_{(s–n)}–(T_nI)$. Here *s* indicates the dyadic sum, and the parentheses surrounding the third operator indicate that the return to the initial tetrachord is optional.[50]

As this row relation will be evoked frequently in the ensuing discussion, I will simplify matters by referring to it as the *S* relation—and to its constituents as being in *S* groups—due to characteristics analogous to those of the sonnet form of the text (as will be explained later). *S* groups are encountered explicitly sixteen times in the song, comprising over three-quarters of its individual tetrachords.[51] For future reference, observe that any tetrachordal pair in this relation has a pc/order-position interchange: the pcs formerly in positions 2 and 3 are now, respectively, in positions 3 and 2 (counting from 0 to 3). Also observe that a consistent result of the relation is the ic-2 connecting node discussed earlier; that is, within any *S* group, the last pc of the first tetrachord and the first pc of the second tetrachord will always be related by ic 2.[52]

(2) Adjacent-pc invariance. Although most rows belong to *S* groups, several do not; moreover, there is the issue of how one *S* group connects with the next. A preference for invariant adjacent pcs is found frequently in these instances. Under this relation, the last pc of

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[50] For example, given T_9 <8467>, we have n=9, s=1, and s–n=4; thus T_9 and T_4I will produce the desired results: <84<u>67</u>> and <59<u>76</u>>.

[51] Perhaps the general features of these groupings were still in Stravinsky's mind when he composed his next work, *In Memoriam Dylan Thomas* (1954). Pc invariance among contiguous rows is prominent therein, and at times recalls features encountered here. For example, consider Trombone III's lead canonic voice in the Prelude, at rehearsal marker B (m. 9). Its three consecutive pentachords are <23410>–<23654>–<21034> or, as related to the row's prime form, $RT_4I–T_6I–RT_0$. Observe that the first and last of these have identical pc content and all three share an invariant trichord, {234}—relations analogous to those of the *S* groups in "Musick."

[52] To elaborate on the point made earlier, if the ic-2 connector alone was the most important attribute, T_0 <E79T> could be followed by $T_{11}I$ <0421>, thus preserving the common $T_n–T_nI$ alternation and overlapping BIP {124}. However, this succession would yield no pc duplication.

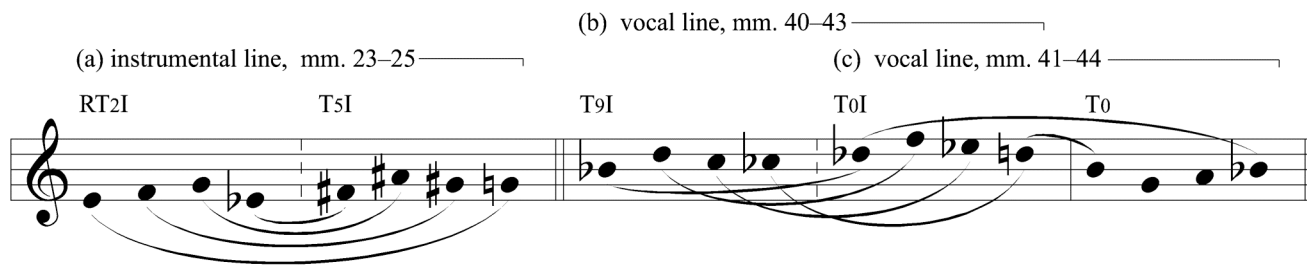one tetrachord is repeated as the first pc of the next, as when the flute and viola in mm. 14–17 have the succession <3E1$\underline{2}$>–<$\underline{2}$643>. The connecting pc could be a shared pivot tone, but there is usually a literal *pitch repetition*—and, in the non-vocal line, a *change of instrument*—thus creating discrete, more clearly delimited rows.

Rows could be combined in various ways to fulfill the adjacent-pc requirement, but recall that there is usually an alternation of T_n and T_nI forms, without retrograde. This means that, in most instances, there is another feature of the relation class just cited: the first and last elements of the first tetrachord become, respectively, the last and first elements of the second tetrachord. In other words, in the mod.-4 system of tetrachord positions, there is an adjacent-position interchange, as in the *S* relation. To state matters more formally, if the first and last elements of the first tetrachord (A) are designated x and y, then a second tetrachord with these characteristics can be derived through $T_{(x+y)}I(A)$.

(3) Initial-pc Invariance. Similar to adjacent-pc invariance, though not quite as common, is the employment of successive tetrachords with the same *initial* pcs. This is encountered in Figure 3, where rows 3 and 4 are connected in this way: <$\underline{E}$79T>–<$\underline{E}$310>. Because retrogrades are rare, this usually means that the two tetrachords involved are inversions of one another around their common initial pc. To state matters more formally, if x represents the first element of the first tetrachord (A), then a second tetrachord with this characteristic can be derived with $T_{(2x)}I(A)$.

(4) Unordered invariance. Unlike the previous order-specific models of row succession, this category involves rows with "unordered" (i.e., inconsistently placed) invariance. In these few instances, perhaps to strengthen the association between the two tetrachords, there are always either two or three pcs held in common, never just one. For example, when the flute line in mm. 7–10 has the succession <E310>–<3E12>, there is not only an interchange of pcs

Figure 5: Ic-3 relations

(a) instrumental line, mm. 23–25 ——————

(b) vocal line, mm. 40–43 ——————

(c) vocal line, mm. 41–44 ——————

RT2I   T5I   T9I   T0I   T0

between the initial dyads of each row but, with a total of three pcs in common, there exists the maximum intersection possible for two rows of this set class.[53]

(5) Ic-3 relations. Under the least-frequently employed relation, there are pairs of tetrachords that share no pcs; or perhaps they share just one pc, but without any consistent order relation. These pairs do, however, have a relation based on interval: ic 3 defines them in various ways, as illustrated in Figure 5. The row successions labeled *a* and *c* have ic 3 as their connecting nodes, whereas in *b*, ic 3 represents the distance between the initiating pcs. Moreover, the row pairs within *a* and *b* are fully related to one another by T_3. As for the application of this distinctive interval, I noted earlier that when ic 3 occurs as the connecting node of two rows, it distinguishes a formal section's beginning or has some other significance. Ic 3 is also prominent in another way: within the *S* groups, it represents the distance between the initial pcs of each tetrachord (as in the opening succession <E79T>–<80T9>). When ic 3 is used in similar fashion here (Figure 5, segment *b*), an analogy with the *S* groups is suggested.[54]

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[53] I.e., because it is a non-symmetrical set, complete intersection is impossible.

[54] As for the row pairs involved in these ic-3 relations, naturally one could argue that they were selected for other reasons. Most notably, there is the {G,D} harmonic cadence of m. 43, which precedes the return of the C-major pentachord (of the Conclusion) as if mimicking a V–I tonal progression. Accordingly, one could argue that T_0I <1532> was selected for its ending pc 2 (D); that the following T_0 resulted from the return to the opening row material; and that the connection between T_0I and T_0 was therefore not based (primarily) on ic 3. One could counter such an argument by pointing out that there were other options for ending with pc 2 at the "half-cadence" moment. For example, the use of T_4 <3E12> would not only provide the cadential pc, but it would preserve the common

Analogous linear designs.

Having defined classes of row succession and described their attributes, an interpretation of the song's broader linear design can proceed accordingly. Certain types of organization may be deduced from Figure 6, which represents the song in diagrammatic form, based on these relations. An advantage of illustrating the song in this way is that one can discern associations between sections of music that are structurally analogous but not precise parallels. For example, notice certain grouping similarities between the two contrapuntal lines, especially at the beginning, middle, and ending:

At the beginning, the instrumental line has three successive *S* groups in their repeated, ABA forms. Overlapping with the third of these, the vocal line answers with three *S* groups of its own, also in ABA form.

At the middle of the song (m. 26), the instrumental line has a five-row segment, of which the first three rows constitute an *S* group, and the overlapping last three rows are structured similarly to an *S* group, as illustrated in Figure 7a. At roughly the middle of this segment's presentation (m. 30), the vocal line commences its own five-row segment, consisting precisely of two conjunct *S* groups, as illustrated in Figure 7b. The segments are analogous to one another in terms of their internal pc and intervallic relationships. Among the attributes they have in common are the following five. (1) Rows 1–3 share an invariant dyad, as do rows 3–5. (2) All five rows share at least one pc, which corresponds to the final element of row 1. (3) Rows 1, 3, and 5 are T_n forms, and these alternate with rows 2 and 4, which are T_nI forms. This last relationship is enhanced by the fact that (4) rows 1, 3, and 5 are identical; and (5) rows 2 and 4
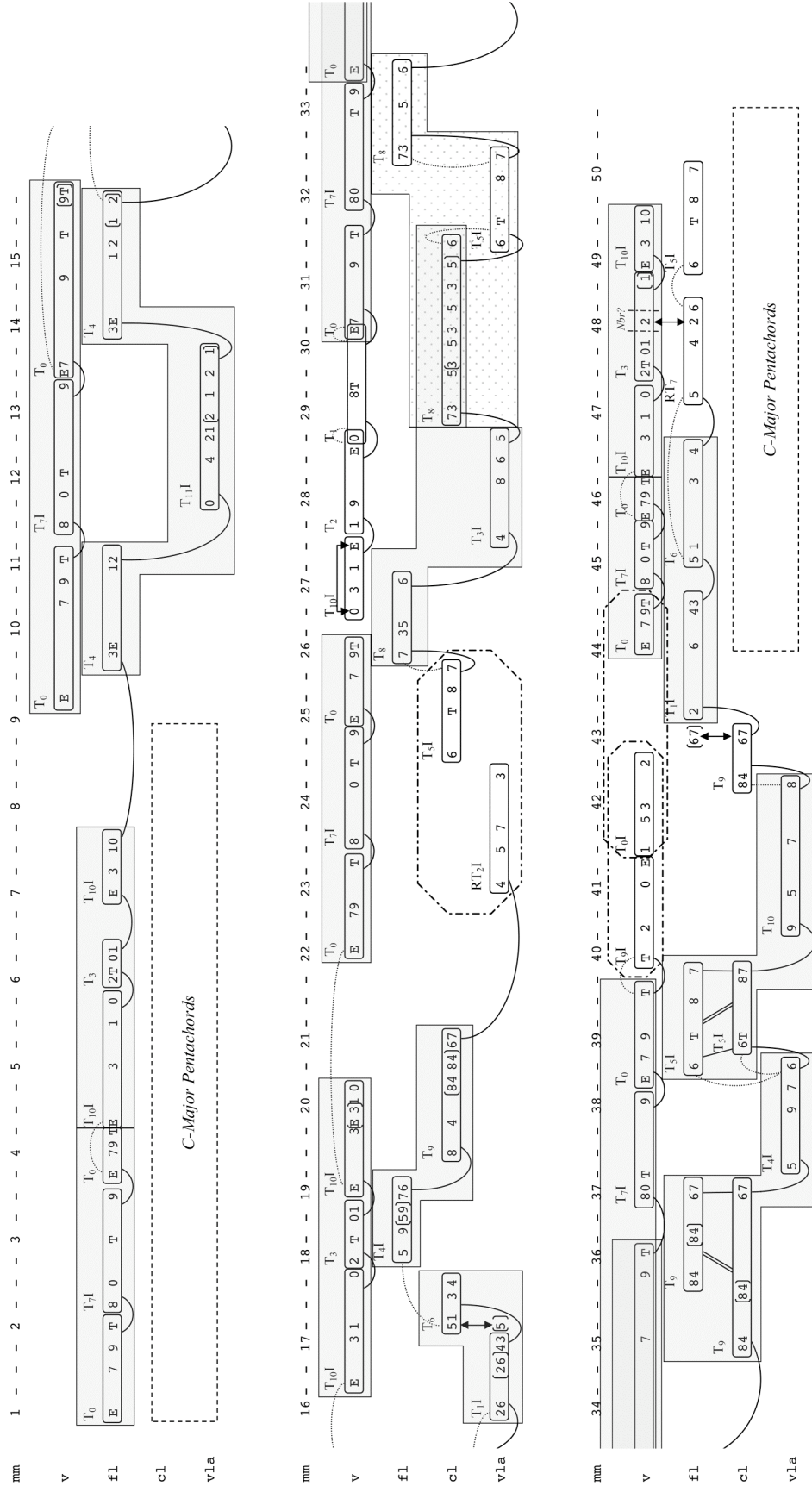
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linear alternation of T_n and T_nI forms (the prior row being T_9I). Furthermore, it would differ in only one pc from the row currently employed, T_0I <1532>. In sum, one could argue for or against different rows in multiple ways. But rather than getting bogged down in matters of intent, I am instead seeking the salient commonality of these few row pairs, which are not included among the other invariance-based relation classes.

Figure 6: Diagrammatic representation of rowform relations

Pc entries are spaced proportionately: each measure number and subsequent dash in the "mm" line represents the onset of an eighth-note beat.

Figure 7: Comparison of five-row segments at the middle

a. Composite instrumental pcs, mm. 26–34

b. Vocal pcs, mm. 30–39

have some degree of pc invariance in addition to having the same sequence of ordered pc intervals. (That is, rows 2 and 4 are fully identical in the vocal segment; and in the instrumental segment they share two pcs and are related by transposition, as opposed to inversion.)

At the ending, the corresponding groups are of different cardinalities: there are two *three*-row groups in the vocal line, and two *two*-row groups in the flute line. This difference may relate to the fact that the C-major pentachord returns here, offered (as in the beginning) by the clarinet and viola in alternation. Together with the vocal line, these parts replicate the two-voice texture of the Introduction (as well as the rest of the song). The flute line adds an extra layer, and in order for it not to obscure the previously clear texture, perhaps the composer restricted it, granting it only four rows to be combined with the six rows of the voice and six pentachords of

Figure 8: Comparison of groupings at the ending

a. Vocal pcs, mm. 44–50
An additional pc (2) is interpolated at the point corresponding to *, as discussed later in the main text.

b. Flute pcs, mm. 44–50

the other instruments. Whatever the rationale for their difference in size, the voice and flute segments are analogous to one another in terms of various internal relationships, as illustrated in Figure 8. Among the attributes they have in common are the following five. (1) Group 1 is an *S* group, in which each row is characterized by second-dyad invariance. (2) Groups 1 and 2 are connected such that between adjacent rows there is initial-pc invariance, and between adjacent pcs there is the ordered pc interval +1 (a comparatively rare connecting interval). (3) Group 2 reverses the pattern of T_n and T_nI rows found in group 1. (4) The final row of group 2 is a T_nI row directed toward a member of the {C,G} cadence. This motion is enhanced by the fact that (5) the first and last pcs of the penultimate row move by semitone toward the cadential pc, and the last pc of the penultimate row is also repeated in the final row, reinforcing the link.[55]

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[55] Regarding the similar connection of groups 1 and 2, it is distinguished by *two* infrequent events. First is the use of ordered pc interval +1, or more generally ic 1, which occurs as a connecting node less often than not only the ubiquitous ic 2, but also ic 0. Excepting its occurrence between the ending flute groups, it is found *only* when two *S*

The segment associations outlined above prompt an interesting comparison with other early serial works by Stravinsky. In many of these, canons were common. "Musick" initially seems different because there are no explicit canons. Indeed, Glenn Watkins compiled a list of the "most prominent appearances of [canonic] technique" among Stravinsky's works composed after *The Rake's Progress* (1951), and it included all the serial works from the early 1950s *except* the Shakespeare songs. Nonetheless, as noted earlier, at the beginning of "Musick" the flute and voice enter successively with the same twenty-four ordered pcs. That is, the song begins with a *pc canon*.[56] Although it does not continue past that point, Figure 6 reveals that there are many other similar events (i.e., relation classes) imitated between the lines. To the extent that the two lines exhibit a sequence of analogously constructed segments (subsequent to the sequence of literal row repetitions), they may be thought of as embodying "canon-like" principles of design. Colin Mason once remarked that Stravinsky, in his other early serial works, seemed intent on "smuggl[ing] in unnoticed" his newly developing methods "in the guise of canons, fugues, and other traditional forms that are by nature 'serial.'"[57] In "Musick," however, it seems that the

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groups are connected. Second, and even more rare, is the use of a retrograde row (there is only one other instance in the song); it begins group 2 in the flute. Let us explore its possible rationale: If the only requirement for group 2, in the flute, had been to begin on pc 5 (thereby permitting initial-pc invariance and the +1 connection), then either of two *non*-retrograde rows could have been used instead: T_6 <5134> or T_4I <5976>. Of these, only the latter also preserves the semitonal ascent between its first and last pcs, which will facilitate the motion toward the cadential pc 7. However, to use T_4I would have been to place two T_nI rows in succession in group 2, instead of maintaining the alternation of T_n and T_nI that is characteristic of the other groups. The row employed, RT_7, is the only one that can preserve *all* the similarities outlined above. Its selection, therefore, seems deliberate rather than capricious, as we might expect of an atypical row-type. (And indeed, a special function was also served by the other retrograde row [viola, mm. 23–24], which created a rare ic 3 that announced the beginning of Quatrain II, as discussed earlier in the main text.)

[56] In fact, Stravinsky seems not to have differentiated pc canons from the stricter species (in which *pitches and rhythms* are imitated). Consider the central song movement of *In Memoriam Dylan Thomas* (1954). Rhythmic relations between the serialized lines are free and octave displacement also occurs; and yet, in the composer's notes to the published score, he calls the song "entirely canonic." Thus, at least in certain instances, Stravinsky apparently equated "canon" with pc canon.

[57] Colin Mason, "Strawinsky's Contribution to Chamber Music," *Tempo* 43 (1957), 8. In an earlier article, Mason referred to "Musick" as "only incidentally canonic" but "indisputably serial" (Mason, "New Music," *Musical Times* 95/1339 [1954], 482). Perhaps here he meant the same thing: that the work is canonic to the general extent that all series-based works are.

Figure 9: Symmetrical arrangement of tetrachord invariances:
composite instrumental pcs, mm. 35–43.

opposite happens: the canons so discernible in the surrounding works are themselves "concealed" in the guise of segment imitations that are analogous rather than literal.

The systematic incorporation of pc invariance also creates other linear designs, such as segments with symmetrically arranged subsets. The two segments examined in Figure 7 have this feature. Another five-row segment is illustrated in Figure 9, which represents the sum of the instrumental pcs of Quatrain III. Particularly striking here is the alternation of two different invariant trichords (representing the maximum intersection possible between two rows) in addition to the customary invariant dyads. Similar attributes are found in smaller segments, as well. Consider the succession <4573>–<6T87> shown previously in Figure 5, segment *a* (mm. 23–25). If the subsequent row, <7356>, is included in the group, one finds that all three have pc 7, and the outer rows each have maximal invariance via the subset {357}.

Structural analogies between sonnet form and S groups.

In the preceding, we interpreted aspects of linear design in terms of analogies that were purely musical (i.e., through relation classes and segment similarities). But musical settings of

poetry are often probed for analogies of a different kind: those between the *words* and the music. And indeed, notwithstanding the composer's usual dismissal of the technique,[58] this song seems to include certain examples of text painting. Some of these may even explain the rare deviations Stravinsky makes from his established serial procedures, and thus they deserve attention. However, to address them now would disrupt a narrative mainly concerned with broader and more consistent features of design; accordingly, such commentary has been placed in Appendix 2. Here I will continue with a different and more foundational type of text–music relation; I will argue that there are certain similarities between the structure of Shakespeare's sonnet and the serial design used most frequently by Stravinsky (the *S* group).

The idea that formal attributes of a poetic text may be mapped onto a musical structure has already been suggested with regard to another of Stravinsky's settings from this period: the subsequent work, *In Memoriam Dylan Thomas* (1954). Robert Gauldin and Warren Benson have argued that there are several instantiations of the number *five* in its music, of which only the most obvious are its five-element row and the number of performers in the song movement (a string quartet plus tenor).[59] This number relates, in turn, to several attributes of its text (by Thomas). For example, it is in villanelle form (i.e., *five* tercets plus concluding quatrain) with iambic *pentameter* verse setting; it features two *five*-word rhyme groups; and it mentions *five* types of men (concluding with the father). With "Musick," the structural associations between text and music involve, yet transcend, the encoding of a number; they play out in the form of three interrelated analogies.

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[58] For example, Stravinsky remarked of *Abraham and Isaac* (1963): "I do not wish the listener any luck in discovering musical descriptions or illustrations; to my knowledge none was composed, and as I see it the notes themselves are the end of the road. . . . Associative listening is not a habit of mine and not one I would wish to cultivate in others" (Stravinsky and Craft, *Themes and Episodes*, 55–56).

[59] Gauldin and Benson, "Structure and Numerology." They find the number to be encoded more in the structure of the "dirge-canons" that precede and follow the song than in the song itself.

First and most generally, the *repeated words* that are characteristic of this and other Shakespearean sonnets find an analogue in the *pc invariance* that is characteristic of Stravinsky's lines. Writing about the sonnets, Helen Vendler has described what she calls the *couplet tie*: the aggregate of significant words (and their variants), usually thematically central to the poem, that appear in both the quatrains and couplet. In her view, the purpose of the device is to forge an identifiable and often insistent verbal connection between the form's main body and its "tail."[60] In our topical sonnet, we find the second half of the form to be unified through two sets of interrelated words: "singleness" (Quatrain II) and "single" (Couplet) relate by *sound* to the two occurrences of "sing(s)" (Quatrain III and Couplet); at the same time, "singleness" and "single" relate by *meaning* to the four occurrences of "one" (Quatrain III and Couplet). That is, there are four repetitions of "one" and four repetitions of the "sing-" words, and different types of relations conjoin them in different ways. Their repetitions and associations bind together different parts of the sonnet's text, just as pc invariances link different segments of the serial lines.[61]

Second and more specifically, the *three quatrains* that comprise the main body of the typical Shakespearean sonnet find an analogue in the *three tetrachords* that comprise Stravinsky's ubiquitous *S* groups.[62] In "Musick," each quatrain consists of alternating rhymed words, and the couplet is also rhymed, making the rhyme scheme abab/cdcd/efef/gg. Thus, third, the *rhyme pairs* that are characteristic of the sonnet find an analogue in the *invariant dyads* that

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[60] Helen Vendler, "Shakespeare's Sonnets: Reading for Difference," *Bulletin of the American Academy of Arts and Sciences* 47/6 (1994), 45–46. See also Vendler, *The Art of Shakespeare's Sonnets* (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1997), xiv–xvi, 28, and various comments on the individual sonnets.

[61] Vendler lists these words by the heading "Couplet Tie" at the end of her commentary on this sonnet (*The Art of Shakespeare's Sonnets*, 82), and I am indebted to her observation; but the above description is otherwise my own.

[62] As reference to quatrains and tetrachords evokes the number four, it should be mentioned that there is a correspondence between row cardinality and performance forces in this song, as there was in *In Memoriam Dylan Thomas*.

are characteristic of the *S* groups.[63] One might also conflate the prior two points of analogy into one, by noting that the sonnet's *three quatrains and concluding couplet* find representation in an *S* group's *three tetrachords, each with an invariant concluding dyad.* Such a conflation might seem initially to be less precise in its analogy than when the points were made separately, but it becomes more suggestive if we consider Eugene Patrick Wright's description of Shakespearean sonnet structure (which reminds us that the purpose of the ending couplet is generally to summarize the preceding quatrains; to compress their meaning in epigrammatic fashion):

> [This] form is going to have three major sub-sets . . . unified both by the
> boundaries of the [whole] set and by the concluding two lines, which not only
> comment on the major idea but . . . [lend] an auditory as well as a logical base for
> the entire sonnet.[64]

Correspondingly, we can characterize the typical *S* group as consisting of three rowforms united in a bounded entity distinguished by invariant dyads, which are indicative of the major pc idea of the song (repetition/invariance), and which thus form the song's logical and auditory base.[65]

However one chooses to parse the preceding analogies, they do suggest some foundational ways in which the musical artwork represents its textual origins; and in particular they suggest how the *S* relation could be interpreted as a musical analogue to the sonnet's own poetic structure. They also remind us of the assertion made at the opening of this essay: that

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[63] One might also note that the sonnet's three quatrains together include but *six* non-rhyming words, just as successive tetrachords in an *S*-group triple will yield but *six* unique pcs.

[64] Eugene Patrick Wright, *The Structure of Shakespeare's Sonnets* (Lewiston, NY: Edwin Mellon Press, 1993), 12.

[65] Stravinsky's pc redundancies could have found an even better match in other sonnet forms that employ fewer unique rhyming words (i.e., that have more rhyme redundancies). For example, the Petrarchan (Italian) sonnet usually begins with two quatrains in identical rhymes: abba–abba; that is, in eight lines there are but two distinct end-rhymes. The remaining six lines are in two tercets that follow schemes such as cde–cde or cdc–dcd; that is, they have just two or three distinct end-rhymes. In contrast, the Spenserian sonnet (established by the English poet Edmund Spenser [1552/53–99]) maintains a common rhyme-pair in each adjacent quatrain: abab–bcbc–cdcd; it then ends with an independently rhymed couplet: ee. Its shared rhyme-pairs between quatrains are evocative of Stravinsky's shared dyads between tetrachords.

within each of Stravinsky's serial compositions, the procedures utilized are those best suited to the uniqueness of the artwork at hand.

Structural analogies between beginning and ending sections.

A final issue of formal design remains to be considered: the relationship between the song's Introduction and Conclusion. Similarities between beginnings and endings are important from the perspective of form, given that repetition (approximate or exact) can be a compelling way to effect closure, rounding off the musical journey by returning to the initial material. Such returns characterize the forms of other serial works by Stravinsky, including multi-movement ones. For example, in the subsequent *In Memoriam Dylan Thomas* (1954), the central song is enclosed by instrumental "dirge-canons"—by a Prelude and Postlude each with alternating statements of four-voice trombone and string choirs; in *Agon* (1957), the initial "Pas-de-Quatre" is reprised at the end; and in *The Flood* (1962), materials heard in the instrumental prelude and choral "Te Deum" (mm. 1–59) return to conclude the work (mm. 490–582), albeit with some rearranged ordering and occasional deletions or extensions. In "Musick," the correspondences between beginning and ending are most strongly suggested by their common employment of the diatonic pentachords, and by the same sequence of rows in one of the lines. However, the sections also embody other structural analogies.

Before turning to these, I will take the opportunity to consider how the one pitch-component of the work *not* derived from the row—the C-major pentachord, which is presented in an ostinato-like fashion at the beginning and ending—relates to its immediate context.[66] If the

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[66] I use the term "ostinato-like" because an ostinato is typically defined by a cyclical repetition of both pitch and durational patterns—attributes not present here.

Figure 10: Scalar segment with octave displacements, mm. 1–4

row and the pentachord are considered abstractly, as set classes 4-2 (0124) and 5-23 (02357), they may be thought of as rather different. For example, bearing in mind the diatonic origin of the pentachord, one might focus on the ic 5s included in 5-23 (there are three), and contrast them with the lack of ic 5 in 4-2. But of course, abstract differences are not as significant as the concrete ways in which Stravinsky brings the two sets into accord. First, like the row, the pentachord is an ordered set; it is always stated in scalar form, either ascending or descending (i.e., in prograde or retrograde). Moreover, the pentachords *alternate* these forms (in all but one instance per section), just as the rows alternate prime and inverted forms. Thus, there is a correspondence between the lines not only in terms of unit alternation, which is a very general process, but also in terms of the internal reversals to which the units have been subjected (the retrograde operation being to the horizontal plane what the inversion operation is to the vertical plane). Second, the row and the pentachord have segment similarity: each contains a trichord with the interval succession 2–1. Accordingly, there are moments in which there are exact correspondences between the serial and diatonic lines. For example, in m. 7, the flute's serial <310> elides with the clarinet's diatonic <245>, two segments related by T_5I. Third, even at other times there will usually be some degree of linear similarity, due to the general commonness of ic adjacencies 1 and 2 in both units. Fourth, the pentachord's pcs are realized with the same kind of octave displacement found in the serial lines. And fifth, the apportionment of the

pentachord to alternating instruments (the clarinet and viola) is reminiscent of how the series is presented in the instrumental line. (Figure 10 illustrates the last two attributes.) In sum, due to analogies of order, pitch distribution, and timbre, the otherwise different row and pentachord are brought into accord.[67]

Having considered some of the more immediate ways in which these units complement one another, let us now broaden our scope to consider the relationship between the Introduction and Conclusion. As noted above, these sections are most obviously alike in that they both employ the pentachords and the same row sequence. But there are other correspondences that run deeper than set repetition alone; despite surface differences in rhythm, register, and texture (when the usual two lines increase to three), there is a substructure that invites further comparison.

Both sections may be described in terms of *superimposed repetitions* (a common feature of Stravinsky's music): in the upper stratum is the four-pc row, repeated in various serial forms; and in the lower stratum is the five-pc C-major segment. Unlike the row, the pentachord repeats without changing pc content, and so there may be a tendency to think of it as an ostinato. However, an ostinato is typically defined as a cyclical repetition of *both pitch* (or in this case, pc) *and durational patterns*. To what extent is a durational component present here? A rhythmic cycle—that lowest-common-denominator module defined when out-of-phase strata come into

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[67] The relevance of the pentachord's projection of *C-major* is also worthy of discussion. Although it is beyond the scope of this essay to consider the role of referential or centric pcs in the song, suffice it to say that C is emphasized in many ways apart from the opening and closing pentachords. Most obviously, three of the five cadences—the first two and the last—close on the perfect fifth {C,G}, with C arriving via the main melodic line in each instance. In this and other ways, Stravinsky integrates a certain "C-ness" into the score that supports the tonal allusion of the pentachord. Brief considerations of the song's tonal implications may be found in separate articles by Edwin Hantz and Lawrence Morton, the latter of whom goes so far as to assert that "The significant formal element of the song . . . is in its harmonic system, not in its manipulations of the row" (Hantz, "*Exempli Gratia*: What You Hear Is What You Get," *In Theory Only* 2/1–2 [1976]: 51–54; and Morton, "Current Chronicle: United States: Los Angeles," *Musical Quarterly* 40/4 (1954): 572–75, quotation from 574).

phase—is absent if we are searching for consistent multiples of a certain rhythmic value.[68] What then is the regulating schema for these presentations? One might suppose that the pentachord is simply employed until the serial melody is completed, at which point it too is terminated. That is, perhaps there is *no* coordination between row and pentachord; they are just two independent layers that continue until the cadence. However, there *is* a pattern, and it suggests that the Introduction and Conclusion were carefully modeled on one another.
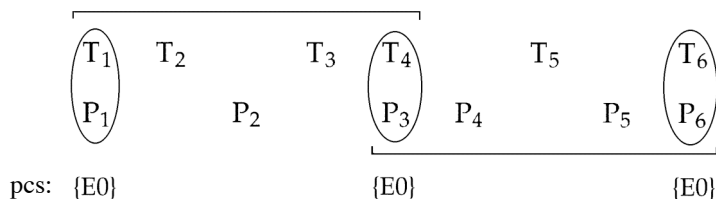
The proportional graphs of Figure 11 show relevant pattern relations between the sections. The integers of the "duration" line denote (and are proportionally spaced according to) the temporal intervals between pitch attacks (including any rests), with integer-value 1 assigned to the shortest event (in this case, the sixteenth note). The pentachord is ordered in stepwise, scalar fashion, and thus integers in the "order number" line correspond also to specific pcs: 0 . . . 4 = C . . . G. The "form" line summarizes this ordering with "P" or "R" (for prograde or retrograde); the occurrence number of each form is given in subscripts. A pitch may be delivered by the viola, clarinet, or both, and this is indicated with "v", "c", or "+" (respectively) in the "instrument" line. The "row correlation" line is occupied only when the initial pcs of tetrachords and pentachords sound simultaneously—that is, when there is an alignment of their initial elements. In these instances, the order number of the rowform is given, along with a superscript denoting its initial pc (i.e., the pc sounding at that specific moment). Thus, for example, "4^E"

Figure 11: Proportional/annotative graph of pentachord statements

NB: In the "duration" line, parentheses indicate initial rests; brackets indicate that, due to a sustained pitch, the enclosed values are totaled on the basis of attack-to-release nodes rather than attack-to-attack nodes. For consistency, the final durational value of m. 7 is 9, which includes the eighth rest before the next pitch attack.

a. Introduction

```
Measure:         1                   3           5                       7
Instrument:      v     c  v     c    v c c   v v + c c   v   c   c   + v v v v c       c c v
Duration:(2)     4     4  4     3    1 1 6   1 1 1 3     2   4   3   1 1 1 1[1 5]       1 2 9
Row Correlation: 1E                          4E                        6E
Order Number:    0     1  2     3    3 2 1   0 1 2 3 4   3   2   1   0 1 2 3 4 0        1 2 3
Form:            P₁                   R₁      R₂                     P₃        P₄             4
```

b. Conclusion

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Measure:         44                    46            48              50
Instrument:      v v   v v   +   c  c  c   v v v v +  c c c c   v v v v v   c   c   c c c   c
Duration:(1)     1 3   1 2   3   2  2  2   1 1 1 1 2  1 1 1 3   1 1 1 1 4   2   3   1 2 7
Row Correlation: 1E                          4E                            6E
Order Number:    0 1   2 3   4   3  2  1   0 1 2 3 4  3 2 1 0   4 3 2 1 0   0   1   2 3 0   4
Form:            P₁          R₁             P₂        P₂        R₃          P₃
```

Figure 12: Ordinal and pc alignment of tetrachords (T) and pentachords (P)

above "P_2" indicates that the fourth tetrachord articulates its initial pc 11 just as the second

prograde scalar segment commences.

The graphs encapsulate many traits, ranging from the ordering of each pentachord and

whether its occurrences are elided or disjunct, to how the duration and presentation of each

statement varies.[69] Most crucially, the graphs clarify correspondences between sections. In each,

there are six forms of the row and six statements of the pentachord. The sequence of rows is

exactly the same both times,[70] as are the first four pentachord orderings, which alternate elided

prograde and retrograde forms. Even though specific pitches and surface rhythms differ between

the two sections, and the second is shorter in duration than the first, a general semblance exists:

there is a one-to-one correspondence of elements in terms of number and pc content. Moreover,

the "row correlation" line shows that there is cyclic similarity between the sections. As detailed

in Figure 12, pentachords and tetrachords come into phase at a ratio of 4:3, and there is pc

consistency at these moments of alignment, with the former always sounding C (pc 0) against the

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[69] Regarding presentation, the graphs illustrate an interesting change in how the pentachords are delivered in the Introduction versus the Conclusion. Although each time they are articulated by the same two instruments (viola and clarinet), the pentachords are timbrally more heterogeneous in the former section (where, especially the start, the instruments alternate every one or two notes), and timbrally more unified in the latter section (where each instrument delivers a pentachord intact—except in mm. 45–46, where the clarinet has G–F–E–D but not the ending C). Perhaps the change in presentation is related to the change in texture. In the Introduction, there are two lines, registrally stratified: the pentachord-based line is always below the flute's row-derived line. However, at the Conclusion, the three lines are not so stratified: the vocal and flute lines are registrally intermingled, and even the pentachord-based line occasionally crosses above one or both of the former parts. In this context, then, presenting each pentachord intact, in the same instrument, helps to facilitate greater linear distinction.

latter's B (pc 11). In fact, in the three-voice texture of the Conclusion, the first and last

alignments (mm. 44 and 49) are identical in their *trichordal* simultaneity, {06E}, and both times

this trichord is assigned to the same instruments and register.

The juxtaposition of B and C does not seem to be accidental. If the pentachords

consistently alternated prograde and retrograde forms, starting with the former, then the sixth

unit should be in retrograde, beginning with G. But this pattern is discontinued in *both* sections

(and, in the Introduction, only with the final statement), such that a prograde form has C just as a

tetrachord has B. The resulting collocation counteracts the presumed C-centrism of the

pentachord and the {C,G} cadences that end both sections.[71] And indeed, B is salient in many

other ways too, such that the interplay or opposition of B and C could be interpreted as an

underlying premise of the song's tonal design.[72]

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[70] In the Conclusion it is the principal serial line—that of the vocal part—to which I refer.

[71] For more on the C-centrism, see n. 67. The use of C as a referential or centric pc is a trait common to many Stravinsky scores, and not just those from before his turn to serialism. For example, the beginning of the *Cantata* (1952) and the start of its "Ricercar II," the last movement of *In Memoriam Dylan Thomas* (1954), and sections of *Agon* (1957) including its beginning and ending movements, all evince a certain "C-ness." (Although it should be noted that these particular movements of *Agon* are not serial, nor is the *Cantata*'s first movement.)

[72] This topic is of course beyond the purview of this essay; however some of the ways in which B is weighted may be described. It has *frequency*: the instrumental introduction and the vocal line (which together serve as the primary melody of the song) are saturated with B; at least every other row contains the pc. Furthermore, B always occurs in the *same register* (B4). It has *timbral continuity*: only the vocal part has B, except for its use in the instrumental introduction before and just after the voice enters, where only the flute has it. (Regarding register in the flute: the lower octave—i.e., a semitone below middle C—would not be possible without a foot key.) B is often the *initiating and ending tone* of phrases, and it has *ordinal priority* in T_0 (which is frequently employed in the vocal part). It is supported by the *cadence* on the harmonic fifth, {B,F♯}, at the end of Quatrain II. The repeating dyads of the vocal part, {9T} and {01}, also have associations with B. These are highly represented sets that engrain themselves in the listener's consciousness, and they suggest a *neighboring complex* about B (pc 11) insofar as, taken as a unit, they are symmetrically balanced around this pc. (Of course, because this is a pitch-*class* system, the axis of symmetry consists of *two* tritone-related pcs; thus, the pcs {9T01} are balanced around the axis 5–11. However, it should be noted that the pcs neighboring co-axis 5—i.e., pcs 6 and 4—are the only pcs totally *absent* from the vocal melody; and pc 5 itself occurs only once. Thus, the principal balance seems to be about co-axis pc 11, offering further support for its underlying centricity in the vocal part.) As for the broader topic of the interplay or opposition of B and C being an underlying premise of the song, Claire Boge has addressed this notion in the "Analytical Application" section (pp. 123–30) of "*Idea* and Analysis: Aspects of Unification in Musical Explanation," *College Music Symposium* 30/1 (1990): 115–30. Her goal is to consider how the song manifests two kinds of *ideas* (in Schoenberg's sense of the term): an *absolute idea*, which "attempts to capture a work's premise through particular syntactic or motivic gestures," and a *metaphorical idea*, which "attempts to describe a work's premise in more analogy-driven language" (117). In "Musick," Boge argues that the metaphorical idea is manifested in large part

Figure 13: The "deviant" D (m. 48)

C-major pentachords

The systematic alignment of B and C might also explain an unusual deviation from serial practice in the vocal part, where the second note of m. 48, D (pc 2), is out of place, in the sense that it doesn't belong to the row succession that is being repeated from the Introduction; see Figure 13. This note could be reconciled with the surrounding rows in different ways. First, if we seek a motivic association, we can observe that the added D creates the second of two {012} trichords in mm. 47–48. If these pcs appeared in the same order both times, then perhaps we might relate them to the characteristic Stravinskian "stutter" mentioned earlier; however, their ordering is different: <102> versus <012>. Furthermore, there are no other moments where the composer incorporates motives that run counter to the serial structure, such that different pcs are required. Second, if we seek a strictly serial interpretation, we can observe that the added D is

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"through the juxtaposition and resolution of a serially handled motive and a polar diatonic scale fragment" (original italics omitted), whereas the absolute idea appears as the juxtaposition and resolution of B and C, the "pitch surrogates" that represent the previously named entities (123).

part of an RT$_4$ statement that is interwoven with the final two rowforms. Countering this interpretation is the fact that no other rowforms are combined in such a way; thus, although the explanation is technically acceptable, it is inconsistent and perhaps excessive. Third, and possibly most convincing in its simplicity, the D could be interpreted as the unison doubling of a pitch in the simultaneous flute rowform. If so, the D isn't really part of a *row* in the vocal part at all. However, it definitely becomes part of the vocal *line*; and coming as it does between two D♭s (the pc that ends the rowform), it seems to serve a neighboring function. That is, a row pc has been embellished by an adjacent non-row pc.

However one may choose to explain its "fit" with the surrounding rows, the appearance of the D remains a rather striking event.[73] On the one hand, it deviates from the norm (meaning not only in general serial terms, but also in *pc-specific* terms, as it is inserted into a particular *S* group that has been heard twice before); and on the other hand, it does so with both registral emphasis (the pitch D4 is just a semitone lower than the highest vocal pitch in the song) and durational emphasis (if its immediate repetition on a new syllable is included, the D is sounded longer than any vocal pc in the preceding five measures). Thus we return to the central question: setting aside one's favored reconciliation, *why* was the D added to the vocal line? Proceeding from prior comments, a contextual explanation might be that its use extends the line by an extra quarter note, allowing the final tetrachord and pentachord to align here, upon B/C, as they did in

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[73] Indeed, the moment was apparently of some significance to Stravinsky himself, as the printed score contains a small "check-mark" sign between the voice's D♭ and our topical D. There is no explanation for this sign (which can be found occasionally in other scores from his serial period), and it seems probable that it was a mark inadvertently left in Stravinsky's manuscript and then copied by the engraver. (This is known to have happened elsewhere: in the Prelude to *In Memoriam Dylan Thomas*, the published designation of rowforms was due to Stravinsky forgetting "to erase . . . [the] brackets left over from my final sketches" when he corrected the proofs. See the editorial footnote in Hans Keller, "*In Memoriam Dylan Thomas*: Strawinsky's Schoenbergian Technique," *Tempo* 35 [1955], 15.) Assuming the check-mark to have origins in Stravinsky's manuscript, one then wonders what the mark might have meant to him. What was he "checking off"?

the Introduction. In this way the beginning and ending are made more similar and the musical "rounding off" more resolute.[74]

* * *

Although no essay can touch on every aspect of a work's design, I have focused on linear pc organization—on Stravinsky's implicit criteria for both successive rowform applications and the forging of larger units—in order to explain certain attributes more comprehensively. In doing so, I have been guided by the principles of invariance and analogy. Pc *invariance* is a specific idea with a variety of manifestations. It is the basis of the primary relation classes into which row successions have been organized, including the ubiquitous *S* groups; and it is also responsible for various symmetrical designs that are found within the lines. The idea of structural *analogies*, on the other hand, is a broader one; the term subsumes a variety of relations that have been evoked in different contexts. On the larger scale, analogies have suggested a way in which a basic serial unit represents a basic textual design (via *S* groups). On the smaller scale, analogies have helped reconcile otherwise disparate elements with their surrounding contexts (as with the C-major

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[74] Two other possible answers come to mind. First, the insertion of D could be interpreted as a singular aberration intended to reflect the concurrent text: "thou single." However, while I am hesitant to discount any notion out of hand, text painting is too often a convenient explanation of last resort. The second and more intriguing possibility is that the word set by D, "thou" (i.e., the word *completely* set by D, not counting the first syllable of "single"), is the otherwise unidentified word that Stravinsky had initially and unintentionally "omitted . . . from the sonnet" (see n. 10). If this is the case, then D's seemingly interpolated nature would make sense: Stravinsky needed to insert a word and thus an additional note at this point, and apparently he did not want simply to repeat an existing note; so he doubled a pitch sounding elsewhere. This second explanation is certainly a credible answer to why the D was inserted, but it raises the question of what the measure had looked like originally. Had Stravinsky simply placed a dotted-eighth-note rest where the D (of the same duration) is now? Such rests do not characterize the vocal melody, and in fact, in the dozen measures beforehand, there is only one other rest of equal or greater length. Instead, was the prior note D♭ held for the duration of what is now the D? Or were the rhythms entirely *different* for the final three measures, before Stravinsky added the missing word? There are too many questions that cannot be answered, especially as there are no sketch materials to consult. (According to Joseph Straus, there are no rough sketches for the song in the Stravinsky collection at the Paul Sacher Foundation in Basel, Switzerland [Straus, "Stravinsky's Serial 'Mistakes,'" Table 1, 259–60].) Therefore, for the broader contextual reasons encoded in the final score itself (i.e., the similar articulations within analogous formal units), I take the 0/11 juxtaposition to be a possible motivator for D's interpolation.

pentachords), and have further buttressed the relationship between the Introduction and Conclusion. The ideas of invariance and analogy have also been interrelated, as when grouping similarities were posited between the two contrapuntal lines, due to pc (as well as intervallic) associations. In these instances, invariance served as a *basis* for analogy.

Both principles are found in Stravinsky's earlier, non-serial music. This is most obviously true of invariance, and I cited the static repetitions within his modular designs, the repetitive pitch layers of his ostinati, and the melodies derived from small collections of pcs. His preference for pc repetitions was also shown to persist in other non-dodecaphonic serial works. Analogy, on the other hand, is a category more diffuse and very context-dependent; and for these reasons I have not cited examples from Stravinsky's earlier music. However, the topic has been explored by Marianne Kielian-Gilbert, who argues that in some of his works, dating back to the 1910s and '20s, different formal units may be productively associated in terms of various kinds of analogies.[75] She asserts that the essence of Stravinsky's designs "lies in their relational patterning," and thus "[t]he grouping, duration, and shape of [his] musical patterns" can attain a kind of motivic status.[76]

Systematic uses of invariance, along with the kind of "relational patterning" required of structural analogies, persist in Stravinsky's *later* serial works too. Although it is beyond the

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[75] Marianne Kielian-Gilbert, "The Rhythms of Form: Correspondence and Analogy in Stravinsky's Designs," *Music Theory Spectrum* 9 (1987): 42–66; her primary analyses are of the second of the *Three Pieces for String Quartet* (1914) and the "Soldier's March" from *L'Histoire du soldat* (1918). See also Kielian-Gilbert, "Interpreting Musical Analogy: From Rhetorical Device to Perceptual Process," *Music Perception* 8/1 (1990): 63–94. In the second article (in which non-Stravinsky pieces are also considered), the analysis of the "Soldier's March" is revisited in greatly abridged form, along with a brief consideration of "The Hymne" from *Serenade in A* (1925). In the analysis of the latter, she demonstrates a play of analogies in which Stravinsky "transforms one recurring pattern . . . into another. . . . [H]e either exploits the similarity of rhythmic, metric, and grouping roles while significantly altering their thematic and harmonic materials . . . , or he exploits the similarity of melodic roles while dismantling or distorting their metric, rhythmic, and grouping settings" (77).

[76] Kielian-Gilbert, "The Rhythms of Form," 66 and 42 (respectively).

scope of this essay to explore the matter, I would argue that they are especially abetted by his use of rotation-transposition arrays, which were first employed in the composing of *Movements for Piano and Orchestra* (1959).[77] When Stravinsky creates a melody by stringing together an array's rows, the resulting line will have both pc invariances and intervallic consistency (as each row begins on the same pc and has the same sequence of intervals, albeit cyclically shifted). And when he constructs different sections of a piece from similar networks of array-derived materials, structural analogies are forged, consisting of intricate correspondences of set classes, interval cycles, patterns of transpositional or symmetrical relations, and/or emphasized pcs and pc sets (a topic I have investigated elsewhere).[78]

Invariance and analogy are thus inter-opus principles for Stravinsky, and yet they are still distinctive in a given context; in each work they serve unique functions. To explore their uses in "Musick" is to attain a deeper understanding of a song that is more than just "a further step along the road" to later pieces (to return to an earlier quote), but instead a worthy destination in itself.[79]

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[77] To construct these, cyclic permutations of a row (usually a hexachord) are stacked in matrix form; the uppermost row has the original ordering, and each row below it has its pcs shifted an additional position to the left. The rows are then transposed so that they all begin on the same pc as the top one.

[78] David Carson Berry, "Stravinsky's Array-Pathway Analogues in Context: The Concept of an 'Anasystemic Variation Procedure,'" a paper presented November 2006 at the annual conference of the Society for Music Theory (Los Angeles, California); and Berry, "What *Kind* of 'Patterning'? Issues of 'Thematicism' Reconsidered in Stravinsky's *Abraham and Isaac*," a paper presented May 2008 at the annual conference of Music Theory Midwest (Bowling Green, Ohio).

[79] Wenborn, *Stravinsky*, 161. (See also n. 13 of the present essay.)

Appendix 1
The Reception History of a Series

A fascinating aspect of the reception history of Stravinsky's "Musick to heare" is the diversity of opinions regarding its serial basis (i.e., the cardinality of its row), as expressed by early writers. These various views stemmed from the multiple possible segmentations of the opening flute (and subsequent vocal) melody, as outlined in the main text. In this appendix, I will summarize opinions put forth in the decade following the song's composition, leading to the time in which recognition of the four-note series became the norm.

The Shakespeare songs were premiered in Los Angeles on March 8, 1954, and published sometime that same year.[80] In October 1954, Lawrence Morton issued what was perhaps the first analysis of the songs, in which he established the idea that "Musick" consisted of a row of "twelve steps but only six different tones." He explained that this row was heard first in the flute, "directly and then by inversion."[81] Interestingly, when discussing the *subsequent* instrumental line (i.e., after the entry of the vocal part), he acknowledged its tetrachordal basis, but he nonetheless related the unit to the larger segment, describing the line as consisting "entirely of varied forms and transpositions of the *first four tones of the row*."[82] A similar account was then offered by Robert Craft, in his liner notes for the first recording of the Shakespeare songs, released in 1956. (The same commentary had also appeared in a German translation, dated September 1955, in a book issued by the German branch of Stravinsky's publisher.)[83] Echoing

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[80] This according to the copyright date, and comments in a letter dated September 7, 1954, from Stravinsky to David Adams at Boosey and Hawkes (*Stravinsky: Selected Correspondence*, vol. 3, 383).

[81] Morton, "Current Chronicle," 572.

[82] Morton, "Current Chronicle," 573, italics added.

[83] The liner notes were released on Igor Stravinsky, *Chamber Works 1911–1954* (Columbia: ML 5107, 1956); the German essay appeared as Robert Craft, "Reihenkompositionen: Vom *Septett* zum *Agon*," in Heinrich Lindlar (ed.), *Strawinsky in Amerika: Das kompositorische Werk von 1939 bis 1955*, "Musik der Zeit" series, vol. 12 (Bonn: Boosey and Hawkes, 1955): 43–54. The passage on "Musick" is essentially the same in both versions, as the

Morton, Craft described the introductory flute melody as "a tone row with six different tones and six repeated tones [i.e., twelve tones altogether] played in direct order and then by inversion." His remarks on the "instrumental accompaniment" were also evocative of Morton's, though ultimately more vague; he noted simply that it consisted "entirely of row tones in different orders or transpositions."

The focus on embedded relations within the twelve-element unit began around the same time. Herbert Eimert offered the most specific commentary in this regard, in 1955, although he considered the basic series (*Grundreihe*) to consist of the first *six* (non-duplicating) pcs, making it only "half twelve-tone" ("*halb zwölftönig*").[84] As this segment was further reducible to a trichord followed by its transposed retrograde, he argued that the whole song grew from the intervallic seeds of the initial trichord—a procedure he compared to Webern's methods.[85] Eimert illustrated some of the nested and overlapping "interval motives" ("*Intervallmotive*") to be found among just the initial ten pcs: twelve in all, of cardinalities three, four, and six. (He added that additional "motives" of various sizes, which he had omitted for notational clarity, would bring the number to twenty-eight!) Such motivic potential aside, Eimert held that Stravinsky's lines

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sentence describing the row will illustrate. In German it reads "Die Exposition des thematischen Materials findet in der instrumentalen Einleitung statt, in der die achttaktige Flötenmelodie eine Reihe mit sechs verschiedenen Tönen und sechs Tonwiederholungen darstellt, die zunächst in der Grundform, dann in der Umkehrung vorgebracht wird" (48). In English it reads "The material of the song is exposed in the instrumental introduction where the flute's eight-bar melody is a tone row with six different tones and six repeated tones played in direct order and then by inversion." (The only significant difference between the complete German and English passages is that the latter ends with an observation not found in the former: "It may or may not be by design that the row order of two notes is upset at the words 'offend thine ear.'" Perhaps Craft did not notice this deviation until the interim between the two versions.)

   [84] Herbert Eimert, "Die drei Shakespeare-Lieder (1953)," in Heinrich Lindlar (ed.), *Strawinsky in Amerika: Das kompositorische Werk von 1939 bis 1955*, "Musik der Zeit" series, vol. 12 (Bonn: Boosey & Hawkes, 1955): 35–38.

   [85] Stravinsky's association with Webern was encouraged by the former composer himself, around this same time. Eimert's essay was published the same year (1955) as were the first two issues of the periodical *Die Reihe*, which were edited by Eimert and Karlheinz Stockhausen. The second issue, devoted to Webern's music, contained a brief foreword by Stravinsky (in both English and German) in which he extolled the virtues of Webern's music—"his dazzling diamonds"—on the tenth anniversary of his death.

were more fundamentally based on six- as well as four-element units; he identified units of only these cardinalities in his ensuing analysis, labeling the former as the basic series and the latter as "two-thirds" of the series.[86]

Similar ideas were then circulated by other writers (though in less analytic detail). In 1958, Roman Vlad echoed Morton and Craft in asserting that "Musick" was based on a series "consist[ing] of twelve sounds, on six different notes." Then, in the spirit of Eimert, he added that, as with "some of Webern's series, its internal structure is also serial" in that it "is made up of cells bearing a reciprocal serial relationship to each other."[87] In support of this assertion, he cited the same trichordal relation that Eimert had identified. This mode of thought continued in 1961–62, when Peter Evans briefly referred to the "Webernian correspondences of its row of twelve notes," which could also be interpreted in terms of "two or three or five corresponding segments."[88]

That "Musick" might be reducible to a four-element row had already been suggested by Morton and Eimert, who each referred to the tetrachord, but only as part of a larger unit (of twelve or six elements respectively). This notion was further refined in 1956, when Anthony Milner excerpted the vocal melody of Quatrain I, and identified its six rows of four pcs each.[89] However, his commentary (like Morton's and Eimert's) suggested that the tetrachord belonged to a larger unit: Milner referred to the song's "series of *two* four-note groups, the second an

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[86] On p. 37 he annotates mm. 1–32 of the instrumental line, along with mm. 9–20 of the vocal line (i.e., the segment that duplicates the pc succession of the flute introduction). A critique of Eimert's analysis appears in Manfred Karallus, *Igor Strawinsky: Der Übergang zur seriellen Kompositionstechnik* (Tutzing: Hans Schneider, 1986), 18–21.

[87] Roman Vlad, *Strawinsky* (Torino, Italy: G. Einaudi, 1958); English version published as *Stravinsky*, trans. Frederick and Ann Fuller, 2nd ed. (New York: Oxford University Press, 1967), 183. See also Vlad, *Storia della Dodecafonia* (Milan, Italy: Suvini Zerboni, 1958), 165–66.

[88] Peter Evans, "Compromises with Serialism," *Proceedings of the Royal Musical Association* 88 (1961–62), 10.

[89] Anthony Milner, "The Vocal Element in Melody," *Musical Times* 97/1357 (1956), 130, ex. 6.

inversion of the [first]."[90] Thus, although only four-element units were marked in the excerpt, the verbal description suggested a *derived row* of eight elements. Such ambiguities were cleared away by Udo Kasemets in 1957, who not only stated unequivocally that "Musick" was "based on a four-note-row," but added that Craft's 1956 liner notes had been "misleading" on that issue.[91] Then, in 1964, Milton Babbitt added his imprimatur to this view when he referred to the song's "serial unit, of just four notes," and specified that the "vocal line consists completely of successive statements of forms of [this] unit."[92] Since that time, analysts have generally recognized the tetrachord as the song's basis.[93]

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[90]   Milner, "The Vocal Element in Melody," 130; italics added. He mistakenly writes "the second an inversion of the second."

[91]   Udo Kasemets, review of Igor Stravinsky, *Chamber Works—1911–1954—Conducted by the Composer* (Columbia: ML 5109, 1956), *The Canadian Journal of Music* 2/3 (1957), 65 and 67 (respectively).

[92]   Babbitt, "Remarks on the Recent Stravinsky," 44.

[93]   There are occasional exceptions, of course. For example, in a 1976 book devoted to Stravinsky's later serial works (of 1958 and afterward), Norbert Jers made passing comments on "Musick" in which he asserted that it was "built on a twelve-element series consisting of six different notes" ("Das 1. Stück . . . ist auf einer zwölfgliedrigen Reihe mit sechs verschiedenen Tönen . . . aufgebaut") (Jers, *Igor Strawinskys späte Zwölftonwerke (1958–1966)* [Regensburg: Gustav Bosse Verlag, 1976], 10).

Appendix 2
Some Further Analogies: Metaphoric Mappings of Text and Tone

In the main text, guidelines for the song's linear design were posited and interpretations were offered in terms of pc invariance and structural analogies. A few deviations from established procedures seem to have been prompted by analogies of a different kind: those between the music and the poetic text. Some of these are addressed in this brief appendix, where I will explore how "music and sweet poetry agree," to quote another sonnet once attributed to Shakespeare.[94]

The three Shakespeare songs marked Stravinsky's first foray into a song cycle since the *Four Russian Songs* of 1919. According to Robert Craft, they were written in part as an exercise in setting English.[95] Stravinsky seemed especially preoccupied with his adopted language during this time. Four of the five original works he completed between 1951 and 1954 included songs,[96] and all were in English: *The Rake's Progress, Cantata, Three Songs from William Shakespeare,* and *In Memoriam Dylan Thomas.* Shakespeare's eighth sonnet, "Musick to heare," was a fascinating choice, as it derives its imagery from music;[97] accordingly, it seems to have prompted

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[94] The sonnet, "If music and sweet poetry agree," is the eighth poem of *The Passionate Pilgrim*, which was published in 1599 and attributed to Shakespeare—although only a few of its poems can be identified as his. "If music . . ." was actually by the English poet Richard Barnfield (1574–1627), who published it the year before in *Poems in Divers Humors* (1598).

[95] Robert Craft, *Stravinsky: Glimpses of a Life* (New York: St. Martin's Press, 1992), 59.

[96] The instrumental *Septet* is the remaining work.

[97] According to Robert Craft, the book from which Stravinsky took the text was an anthology co-edited by his friend and *Rake's Progress* collaborator W. H. Auden: *Poets of the English Language*, ed. Auden and Norman Holmes Pearson (New York: Viking Press, 1950). The sonnet appears in vol. 2, 154, where it is first among the sonnets chosen for publication. (The texts of Stravinsky's *Cantata* [1952] were selected from vol. 1 of the same anthology. See Craft, "Selected Source Material from 'A Catalogue of Books and Music Inscribed to and/or Autographed and Annotated by Igor Stravinsky,'" in *Confronting Stravinsky: Man, Musician, and Modernist*, ed. Jann Pasler [Berkeley: University of California Press, 1986], 351–52.) However, it should be noted that in a letter to Erwin Stein (editor at Boosey and Hawkes) regarding the Shakespeare songs, Stravinsky referred to "discrepancies in the [text's] spelling" resulting from the Auden edition, and stated that he would "make the necessary corrections according to the Nonesuch Press text" (letter of November 20, 1953, in *Stravinsky: Selected Correspondence*, vol. 3, 379; he did not specify *which* of the Shakespeare songs included these "discrepancies.") By "the Nonesuch Press

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Stravinsky to fashion certain analogies between text and tones. Below I consider a few of the instances that are more salient due to being deviations from the procedures he otherwise followed in the song.[98]

First let us consider changes in how rows are *connected*. In most instances, the row partitioning is clearly demarcated. Even when the ending pc of one tetrachord is the same as the beginning pc of the next, the pc is *repeated*—and, in the non-vocal line, distinguished by a *change in instrument*—so that clear divisions are discernible. However, there is a deviation in the vocal line of mm. 28–30: for the first (and only) time, every fourth pc is shared, so that rows are joined conjunctly. This occurs following the text "Unions married," which the music reflects in that each row is now joined with its neighbor.

A subsequent section also deviates from having each row presented by a different instrument, albeit in another way. We find *simultaneous* row doublings at the beginning of Quatrain III (m. 35). First, the clarinet accompanies the voice with <8484>, a repetition of the first two pcs of T_9. Then the flute doubles the pattern an octave higher, just as the vocalist sings "husband to another." The last two pcs of the row are delivered by both instruments simultaneously, along with the text "each in each." In m. 39, the flute and clarinet double T_5I in

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text" he probably meant *The Complete Works of William Shakespeare*, a.k.a. "The New Nonesuch Shakespeare," ed. Herbert Farjeon (London: Nonesuch Press, 1953), a new version of an edition published in 1929. It presents the sonnets as they appeared in their original 1609 edition; "Musick to heare" is in vol. 4, 128. In the case of "Musick," Auden's version is almost exactly like that of the Nonesuch edition, in both spelling and punctuation, except that the former employs the modern-day spelling of "sire" whereas the latter uses the archaic "sier." Given that Stravinsky adopts "sier," it would seem that the Nonesuch edition was his ultimate source. But that fact aside, the composer also incorporates four spelling modernizations not found in *either* edition: "Marke" becomes "Mark," "an other" becomes "another," "mutuall" becomes "mutual," and "speechlesse" becomes "speechless" (even though "singlenesse" is retained). The score's text also deviates in smaller ways from both editions: there are four changes in commas (three are omitted and one is added) and three changes in capitalization (but all involve words beginning with letters that look similar in upper and lower cases—specifically, "u" and "s"—and thus perhaps the changes were not intentional on the composer's part, but instead resulted from an engraver's mistake in reading his handwriting).

[98] Additional commentary on text painting is offered in Neidhöfer, "An Approach to Interrelating Counterpoint and Serialism," 167–71.

slightly different rhythms, but in a mixture of unison and octave-multiples so that only one pc

sounds at a time. These two similar parts, one born of the other, accompany the text "sier, and

child." In each of the preceding cases, the text refers to related pairs of people while the

(uncharacteristic and thus more conspicuous) row doublings present musical couplings.[99]

Lastly, let us consider an instance in which a row deviates from its prescribed *ordering*.

In the vocal line of mm. 26–27, $T_{10}I$ appears as <031E> rather than <E310>; i.e., its outer

members swap positions. This results in one of the rare occurrences of melodic ic 3 (a topic

addressed in the main text), which makes the reordering more striking. Colin Mason has referred

to this as a "serial slip on the composer's part,"[100] but I concur with Babbitt that the "deviation

from an established norm" could highlight the text's reference to "offend[ing] thine eare."[101] The

text also suggests another possible motivation for this reordering when, immediately before, it

refers to "the true concord of well-tuned sounds." As shown in Figure 14, the alteration results in

a greater preponderance of ic 5s between the contrapuntal lines than what would have occurred if

pcs 0 and 11 were in their prescribed places.[102] Especially in its perfect-fifth form, this ic might

be heard as representing a "well-tuned," concordant interval. Whether intended to "offend" serial

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[99] There are also some pc similarities among the settings of the words "mother," "sier," and "child" (mm. 38ff.) that could be interpreted as representing these familial relationships, but as pc invariance is a hallmark of the entire song (as well as a basic Stravinskian trait), it may be incidental. Returning to the lines addressed in the main text, Arthur Berger has offered a different interpretation of "husband to another." He first warns that "one should not make too much of [word-painting] or claim it is there when it is not," for to do so makes "a travesty of expression" and "leads others to deny it entirely." He then contends that this latter reaction, so associated with Stravinsky, "is no doubt what [the composer] had in mind" when he set "one string[, sweet] husband to another," such that "the winds play and the viola rest[s]" (Berger, "Music as Imitation," *Perspectives of New Music* 24/1 [1985], 110 and 117, n. 14). That is, Berger views the setting of this particular line as ironic (in that the reference to a string is *not* accompanied by the string instrument) and indeed anti-expressive. Of course, his interpretation could coexist with mine; the two layers of meaning are not mutually exclusive.

[100] Mason, "Strawinsky's Contribution to Chamber Music," 9.

[101] Babbitt, "Remarks on the Recent Stravinsky," 44. Craft had earlier noted the same thing (see n. 83).

[102] That is, assuming all other elements (such as rhythms and the accompanying line) remain as written. In such a case, the properly placed pc 11 would sound along with pc 5, forming ic 6; and pc 0 would appear immediately after the other line's pc 6, suggesting another ic 6. As observed in nn. 38 and 49, ic 6s are infrequent in Stravinsky's serial harmonies.

norms or to offer greater contrapuntal "concord," this deviation once again suggests an analogy between musical design and textual inferences.

Figure 14: Prevalence of ic 5s in counterpoint, mm. 26–28, after pcs marked * are exchanged

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