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Serial Intervention  
in Nono's *Il canto*  
*sospeso*

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ABSTRACT: The instrumental movements of Luigi Nono's *Il canto sospeso* exhibit a variety of procedures that override determinations made by serial structures. The overrides, as I describe them, yield novel textures in multiple musical dimensions and seem to inspire Nono's experimentation with electronic media later in his career. Further, multidimensional textures create formal musical and symbolic regions that underlie Nono's projection of highly charged textual matter.

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[1] Nono's experimentation with total serialism during his association with the Darmstadt Summer Courses (roughly 1950 to 1960) produced works whose lineage to serialism becomes interwoven with other compositional strands. The mixture of ideas fosters competition between organizing forces in his compositions from that time, yielding an outward appearance of erratic or conflicted behavior especially with regard to serial principles of ordering.<sup>(1)</sup> For instance, Nono's studies in Renaissance puzzle canons during the previous decade shaped his musical endeavors.<sup>(2)</sup> Not unlike his contemporaries, he occasionally used imitative procedures inspired by puzzle canons as organizing elements that operated beyond the reach of serial material.<sup>(3)</sup> Pitch-class palindromes, for example, subject their generative twelve-tone series to replicative symmetry, in complete independence from any inherent symmetry that the series possess. As another example of competing organizational forces, Nono developed musical textures in several non-pitch dimensions. Relationships between dimensions evolve and change throughout a composition, driving its form independently of regions delineated by transformations of serial content.<sup>(4)</sup>

[2] Recent scholarship has loosely grouped these complex inter-dimensional relationships together under an umbrella term, "multidimensionality." Large-scale multidimensionality shapes a 1960 piece for eight mixed voices, *Sarà dolce tacere*, and creates formal regions in a 1958 work for thirty-two mixed voices, *Cori di Didone*.<sup>(5)</sup> Both compositions, whose material is derived serially, achieve motion in various dimensions through imitation. For instance, in *Sarà dolce tacere* a particular durational value can echo throughout a passage of music, as can a single pitch (as opposed to a pitch-class) or a dynamic marking. Imitation also occurs in proportion (2:1 durations, for instance), taking inspiration from prolation canons. The echoes build threads in several dimensions. If the threads involve distinct performers, the threads intertwine in contrapuntal relationships analogous to contrary motion. Conversely, if echoes between threads occur within the same performers, the threads combine in a manner analogous to parallel motion. *Sarà dolce tacere* begins with densely skewed counterpoint and progresses gradually toward unison movement at its conclusion so that multidimensional textures give it shape, rather than serial transformations.

[3] Multidimensional motion as achieved by his choral works seems to have evolved dramatically when Nono experimented with electronic media. Nono describes his experiments with electronic sources as broadening traditional ideas of canonic imitation and musical motion, but the language he uses is directly derived from procedures used in his analog choral music:

Non è il canone alla Frescobaldi, o il canone rinascimentale, si tratta piuttosto di alcuni elementi che si compongono in modo canonico... che si mettono in circolo ma non necessariamente; non si tratta cioè dell'intervallo, della durata o del timbro... quello che faccio oggi a Friburgo con questo strumento che si chiama Halaphon è qualcosa di analogo. Tu dinamizzi nello spazio attraverso vari altoparlanti a velocità contrastanti un suono e questo suono poi si protrae girando in una direzione unica e in plurime direzioni. Lo stesso suono puoi farlo girare con altri quattro movimenti nello spazio: per esempio, con dinamiche differenti, con tempi differenti, acceleranti e ritardanti, oppure a salti... L'ascolto risulta estremamente complesso, ma la cosa più straordinaria è che non hai bisogno di quattro segnali differenti, basta un unico segnale.

[It's not the canon of Frescobaldi, or the Renaissance canon. It deals above all with some elements that are composed in a canonic way... that you place in a circle, but not necessarily. It's not a matter of, shall we say, interval, duration, or timbre... what I do now at Freiburg with this instrument called the "Halaphon" is somewhat analogous. You dynamize

a sound in space through various loudspeakers at contrasting velocity, and this sound then extends itself by spinning in a single direction as well as in several directions. You can make the same sound spin with four other motions in space: for example, with different dynamics, with different tempi, accelerating and decelerating, or else with jumps... Listening turns out to be extremely complex, but the most extraordinary thing is that you do not need four different signals; a single signal suffices.]<sup>(6)</sup>

[4] Nono's work with electronic media revolved around spatial considerations and their acoustical effects. For instance, a sound approaching a listener rises in dynamics and fades as it passes. Its pitch level also rises and falls. By imitating the acoustic effects produced when a sound moves in relation to the perceiver, electronic instruments could simulate spatial motion. Actual spatial motion could also be achieved by having a signal travel across several acoustic sources. More importantly, a single electronic source could project several simultaneous movements quite clearly; multidimensionality required a large number of performers in comparison and created motion in several simultaneous dimensions much less audibly. Nono would refer to the spatially rendered music yielded by his electronic experiments as "il suono mobile."<sup>(7)</sup>

[5] The present paper arises from the hypothesis that Nono's serial experiments provided inspiration for his electronic experiments, with multidimensional textures serving as prototypes for "il suono mobile." The 1956 cantata *Il canto sospeso* exhibits a crucial stage of multidimensional development, making additional innovations in text-setting that provide a complementary façade for multidimensional textures.<sup>(8)</sup> As I shall discuss later, various re-ordering operations (as opposed to row transformations achieved through pitch-class transposition and inversion) create serial complexes whose elements are systematically consumed one by one to furnish attributes for a corresponding number of notes.<sup>(9)</sup> Thus, a typical twelve-element series plus its eleven order-position transformations would create an ordered complex of 144 elements, which would determine the pitch-classes, durations, or dynamics of exactly the same number of notes. I shall refer to the determinations made by such complexes generally and simply as "serial material." By building its music note by note from such complexes, the composition illustrates serial origins of multidimensionality more visibly than *Cori di Didone* or *Sarà dolce tacere*, for instance. Pieces like these represent a stage at which Nono created multidimensional textures directly and do not use large serial complexes to supply content for every note in the composition.

[6] With *Il canto sospeso* (the "suspended" or "interrupted" song) Nono made a dramatic stylistic shift from earlier choral works and bolstered his international standing as a composer. Written for soprano, contralto, and tenor soloists, mixed choir, and orchestra, the piece quotes letters written by members of the European Résistance before their executions. A 1954 collection of these letters circulated in Italy, providing direct inspiration for the cantata. <sup>(10)</sup> Further inspiration undoubtedly came from Arnold Schoenberg's *A Survivor from Warsaw*, whose influence can be heard in Nono's earlier choral works. <sup>(11)</sup>

[7] The piece uses ten letters written by persons from six countries. The textual translations appearing below are numbered according to the movement in which they appear: <sup>(12)</sup>

No. 2: I am dying for a world which will shine with light of such strength and beauty that my own sacrifice is nothing. Millions of men have died for this on the barricades and in war. I am dying for justice. Our ideas will triumph.

-- Anton Popov, Bulgaria, 26-year-old teacher and journalist

No. 3: They are taking me to Kessariani for execution together with seven others. I am dying for freedom and for my homeland.

-- Andreas Likourinos, Greece, 14-year-old student

Today they will shoot us. We die as men for our homeland. Be worthy of us.

-- Eleftherios Kossès, Greece, 19-year-old student

They are hanging me in the square because I am a patriot. Your son is leaving, he will not hear the freedom bells.

-- Konstantinos Sirbas, Greece, 22-year-old hairdresser

No. 5: If the sky were paper, and all the seas of the world were ink, I could not describe my suffering and all that I see around me. I say goodbye to all of you and weep.

-- Chaim, Poland, 14-year-old boy

No. 6: The doors open. Here are our murderers. Dressed in black. They drive us out of the Synagogue. How hard it is to say goodbye forever to life which is so beautiful!

-- Esther Srul, Poland

No. 7: Goodbye mother, your daughter, Liubka, is going into the moist earth.

-- Ljuba Schevtzova, Soviet Union

No. 9: I am not afraid of death.

-- Irina Malozon, Soviet Union

I will be calm and at peace facing the execution squad. Are those who have condemned us equally at peace?

-- Eusebio Giambone, Italy, 40-year-old typesetter

I go in the belief of a better life for [all of] you.

-- Elli Voigt, Germany, 32-year-old worker

[8] The opening textual selection in No. 2 sets the stage thematically for the ensuing selections. No. 9 recapitulates No. 2's themes, evoking a transcendent quality. Both Nos. 2 and 9 are set for choir, offering complicated vocal textures in line with their transcendent tone.<sup>(13)</sup> In contrast, No. 3 quotes three Greek citizens who provide frank, journalistic descriptions of the fates awaiting them. The remaining texts (Nos. 5, 6, and 7) evoke a third atmosphere, one of lament and departure.

[9] Beyond its textual matter, the composition has notable yet enigmatic features. The piece departs dramatically from Nono's declamatory style in earlier works even though its textual matter (which bears uncanny resemblance to *Survivor*) begs for comprehension. The muddled textual delivery led Stockhausen to remark that the sonic content of the texts itself became subject to serial re-ordering, thereby creating a rift between phonetics and semantics.<sup>(14)</sup> Nono refuted Stockhausen's (well-intended) observations, asserting that his music intertwined the phonetic and semantic aspects of its texts at historically profound levels.<sup>(15)</sup> In the debate Nono sheds all doubt that *Sospeso*'s texted movements preserved the letters' meaning, but nowhere does he mention how the three instrumental movements (Nos. 1, 4, and 8) engage the piece's textual content.<sup>(16)</sup> The analytical work of the present paper will focus on the instrumental interludes, and as will be seen, they make essential contributions to the piece's overall artistic mission.

[10] *Sospeso* has also received the bulk of scholarly attention devoted to Nono's earlier works, especially since the Archivio Luigi Nono in Venice furnished sketch materials to the public in the 1990s. Massimo Mila provides an overview of *Sospeso*'s compositional process and an analysis of the tenor solo in No. 3.<sup>(17)</sup> Kathryn Bailey's analysis continues to be the most extensive study in English.<sup>(18)</sup> Insights since gained by examining sketch materials can fill many of the "gaps" left open by her analysis; I shall do my best to update her work in this regard.<sup>(19)</sup> Ivanka Stoianova addresses textual "spatializations" created by *Sospeso*'s text setting, categorizing various levels of "delinearization" according to whether they rearrange a word's internal components or weave several words

together. <sup>(20)</sup> Wolfgang Motz furnishes a summary of sketch materials and writes on the entire composition; in addition, he has reported on Nono's "liberal fantasies" at the beginning of No. 1 in matters of registral placement and orchestration. <sup>(21)</sup> Erika Schaller also includes a chapter on *Sospeso* in her study of works composed between 1955 and 1959. <sup>(22)</sup> Nicholas Huber has commented extensively on Nos. 6a and 6b, revealing an overall palindromic structure that enacts a Nazi raid on a synagogue. <sup>(23)</sup> Gianmario Borio includes a brief overview of No. 4's re-ordered row complex and relates it to procedures in Boulez's *Structures* 1a. <sup>(24)</sup>

[11] My work here examines the multidimensional aspect of Nono's music in relationship to its serial procedures, unlike previous studies. As mentioned, multidimensionality acts as an increasingly influential organizing agent in Nono's serial compositions. For this reason, complexes generated by serial re-ordering operations, which are neatly outlined in *Sospeso*'s sketches, appear to lose their immediate connection to the resulting music, undergoing a procedure that I shall call "intervention" on their way to multidimensional realization. Nono saw intervention as an integral component of serial composition, citing Schoenberg himself:

Tu parli di un uso delle serie con riserva, io parlo invece di un uso della serie con fantasia libera. Bruno [Maderna] e io eravamo perfettamente convinti di questa necessità. Da analisi delle opere di Schönberg, per esempio le Variazioni op. 31, risulta che l'uso delle serie non segue mai la numerica schematizzata da Leibowitz e da tanti geometri catastali della musica. Lettere di interpreti, di Kolisch e di Steuermann, interrogano Schönberg su possibili error 'seriali' in sue partiture non consequenziali alla sopracitata numerica schematizzata. La risposta di Schönberg chiarisce la sua fantasia libera: più o meno (non ricordo a memoria) dice: "è possibile che voi calcoliate in un momento un data suono della serie, ma in quel momento ho sentito altre fantasie compositive.?"

[You are talking about using the series rigidly; I'm speaking instead of using the series with liberal fantasy. Bruno [Maderna] and I used to be perfectly convinced of this necessity. Analyses of Schoenberg's works, for example the Variations Op. 31, show that using the series never follows the numerical schematization by Leibowitz or by such geometric heaps of music. Letters by interpreters, Kolisch and Steuermann, interrogate Schoenberg on possible "serial" errors in his scores that are not consequences of the above-mentioned numerical schematizations. Schoenberg's response clarifies his liberal fantasy. More or less (I do not have this committed to memory) he says: "It is possible for you to

calculate at a[ny] moment a note determined by the series, but at that moment I have heard other compositional fantasies.”]<sup>(25)</sup>

[12] The level of decision-making that serial “schematizations” do not encompass would always take precedence:

Und auch mit dem Etikett seriell kann ich mich nur unter Vorbehalt einverstanden erklären. Ich schrieb schon damals nicht, was die Presse durchorganisierte Musik hieß. Ich arbeitete immer sozusagen in drei Stufen. Zuerst wählte ich das Material, das intervallische, das klangliche, das rhythmische. Dann experimentierte ich mit diesem Material, unterzog es vielleicht auch verschiedenen präedeterminierenden Prozessen, aber nur um zu sehen, in welcher Richtung es sich entwickeln könnte. Und dann komponierte ich, leitete also aus dem Material und den ihm einbeschriebenen Möglichkeiten eine ihm gemäße Form ab. Dabei war für mich das Komponieren nie bloß die Konkretisierung von vorgeformten Strukturen. Stets spielten improvisatorische Momente mit; ich hielt mir die Entscheidungen bis zum letzten Augenblick offen.

[As for serial etiquette, I can only explain going along with it reservedly. Even back then [in Darmstadt] I was not writing what the press called totally organized music. I always worked, so to speak, in three stages. First I chose the material, the intervallic, harmonic, rhythmic [aspect]. Then I experimented with this material, subjected it perhaps also to various predetermined processes, but only to see in which direction it could evolve. And then I composed, derived from the material and its inscribed possibilities a form in accordance with it. In that regard composing was never for me merely the concretization of preformed structures. Improvisatory moments always played a part; I left decisions open until the last instant.]<sup>(26)</sup>

[13] Nono’s interventions arise in part to create multidimensional textures in *Sospeso*. Serial re-orderings, even when affecting several dimensions simultaneously, cannot produce multidimensional motion directly. Thus, Nono’s interventions, and lack thereof, will shape the discussion. I shall present two main, provisional types of intervention in the following pages. I shall also present various manifestations of these two categories that appear in *Sospeso*. I do not intend for the details offered here to be exhaustive, as other works contain further variants. In addition, I shall use the interactions among various musical dimensions as a framework to rework existing analyses and present new ones altogether of the three interludes.

#### **Type I: Intervention by systemic override**

[14] In this intervention type, a secondary system mediates the implementation of elements generated by a primary system, re-ordered row complexes in the case of *Sospeso*. The secondary system directly overrides determinations such as the ordering of pitch-classes or rhythmic values. The overrides are mechanized so that they affect large numbers of notes, much as primary systems generate material in large quantities. I refer to any intervention by secondary system as a "systemic override" to reflect the competition between systems, as well as the automated nature of the overrides.

[15] A near-ubiquitous systemic override in Nono's music intervenes with the implementation of duration material. To illustrate how this is done, I shall use a system for notating rhythmic durations as fractional values. In this scheme, denominators (bottom values) represent the number of parts that divide a quarter note; for this reason they are called "beat-divisions."<sup>(27)</sup> For instance, an eighth-note divides a quarter note into two parts; it would be assigned a denominator of 2. Similarly, an eighth-note triplet receives a denominator of 3, and so on. Numerators in this system represent factors given by serial systems, which beat-divisions then distort. For example, the duration factor 12 strongly bears the influence of the beat-division applied to it. Applied to a beat-division of 3, the resulting duration (12/3) has a length equal to four quarter-notes. Applied to a smaller beat-division such as 4, the resulting duration (12/4) results in a shorter length, three quarter-notes as opposed to four. Beat-divisions can also invert size-relationships between duration factors. A large factor can be applied to a small beat-division (12/6, equivalent to two quarter notes) and result in a shorter duration than a small factor applied to a large beat-division (5/2, equivalent to two-and-a-half quarter notes). In all, beat-divisions maximize the rhythmic variety afforded by a given base duration series.

[16] The opening measures of No. 1 illustrate the wide range of durations that beat-divisions produce. [Example 1](#) shows the first few measures of No. 1. Boxed areas in the example may be clicked on to show their contents. [Box 1](#) in the figure contains five notes that bear duration factor 5.<sup>(28)</sup> Also, rhythmic values for pc-t and pc-7 in Box 1 are notated using beat-divisions that have been doubled, effectively dividing an eighth note rather than a quarter note, as before. Duration-factors have also been doubled, so that pc-t has the duration 10/6 and pc-7 the duration 10/14. The doubling of duration-factors and beat-divisions occurs rather late in the compositional process, as Motz discusses in "Konstruktive Strenge." That is, Nono decided to double the values of some but not all notes after he had determined their durations. The rhythmic notation of



the two notes here indicates that Nono doubled their values. However, the conversion does nothing to displace the original notes or to alter their overall length, and they could still have been notated using the original durations, which are shown in the boxes. Other doubled durations cannot be reduced back; they will be discussed shortly. Pitch-classes follow the ordering of *Sospeso*'s twelve-tone series (9 t 8 e 7 0 6 1 5 2 4 3), which shows that duration factors receive increasingly smaller beat-divisions ( $1/2$ ,  $1/3$ ,  $1/4$ ,  $1/5$ , and  $1/7$ ). The repeated pc-9 of [Box 2](#) occurs not as an isolated incident but as a byproduct of a technique that I shall discuss later. Although all five notes in Box 1 share the same duration factor, they acquire distinct durations when applied to various beat-divisions. The beat-division process continues in Box 2, whose pitch-classes share a single duration factor (10) and course through the five successively smaller beat-divisions of Box 1. <sup>(29)</sup>

[17] Serial order can compete with a second systemic override that uses rests to displace notes within chords. Rests of varying length create staggered entries rather than a unison, chordal attack. Values of rests preceding notes can be viewed in [Box 1](#) and [Box 2](#). Those rests have duration factors determined by the integer succession from 1 to 5. The succession maps onto pitch-class order through permutation, and Box 2 rotates the factors from Box 1. The placement of notes has a twofold effect. First, originally successive members of a pitch-class series become a single vertical configuration, obscuring serial order on one level. That verticality undergoes distortion by having its members displaced. Altering the arrangement of offsets between chords obscures serial order even more pervasively and unpredictably.

[18] A third systemic override multiplies serially-determined values by a proportional factor. For instance, [Table 1](#) contains the content for notes in m. 7 and mm. 22-23 (not shown). In m. 7 the beat-division 5 is multiplied by 2 to create the proportionally smaller division  $1/10$ . With a numerator of 11, the note cannot be reduced back to the original denominator. Likewise, mm. 22-23 contain serial factors of double length (22 and 14) and doubly smaller beat-divisions. <sup>(30)</sup> While the values of these notes reduce mathematically to the original duration-factors and beat-divisions, the notes cannot be converted back to the original notation due to their metric placement. A rest of duration  $5/6$  precedes pc-t; the  $5/6$  rest cannot be converted to beat-division 3. Similarly, a rest of  $1/6$  duration precedes pc-2, and it also cannot be converted to beat-division 3. I have thus left the doubled values intact in Table 1. The multiplication reminisces of imitative procedures in augmentation and diminution canons, which reproduce material in proportional durations. Its use in *Sospeso* is not as pervasive as override by beat-division or

rest-displacement, but it is worth mentioning in light of Nono's fascination with puzzle canons.

## **Type II: Intervention by manual override**

[19] The second type of override has a more destructive effect on serial determinations, and not surprisingly, multidimensional textures find their most efficient realization through it. Override results from direct intervention, such as the outright alteration of a serial value. [Box 2](#), for instance, contains an anomalous duration-factor of 9 in a region governed by duration-factor 10. The truncation appears to be inadvertent, but the alteration does serve a justifiable purpose.<sup>(31)</sup> By having the timpanist play the note as part of a decrescendo to the quietest dynamic value, Nono may have intentionally shortened the note to accommodate aftershocks from the percussionist's cut-off. To reflect Nono's direct manipulation of serial determinations, I shall refer to any intervention of this type as a "manual override." Manual overrides defy neat categorization, appearing in numerous guises to befit the varied purposes they serve.

[20] The dimension of dynamics affords one consistent realm for manual override. For instance, No. 4's dynamics make a global hairpin shape, in which large groups of notes share one marking before a successive marking takes effect. Similarly, the first thirteen notes of No. 8 bear a single indication (fff) before another usurps it. The dynamics dimension contradicts pitch material in both movements, which changes with each note. In terms of multidimensional counterpoint, the pitch dimension employs serial material at a more rapid rate than the dimension of dynamics to create oblique motion between dimensions. Kathryn Bailey's investigation of dynamics also suggests that Nono applied material in this dimension manually and designed his overrides to mimic the equalized distribution of elements in other dimensions.<sup>(32)</sup>

[21] In general, manual overrides intervene with the implementation of serial material, not its generation. For instance, Nono occasionally leaves out elements within a complex altogether or repeats them arbitrarily. At other times, he may interpret the same complex in multiple ways, or cease consuming it prematurely. More importantly, he may deliberately counteract an identifiable feature of a complex, and even override other overrides. In the end, Nono generally adheres to the possibilities presented by serial material, but he rarely refrains from intervening with it.

**No. 4**

[22] Of the three interludes, No. 4 undergoes minimal intervention, thereby projecting its underlying serial complex clearly. Nono plots out the placement of notes in the score using a technique studied by Gianmario Borio and Veniero Rizzardi, and more recently, Christoph Neidhöfer.<sup>(33)</sup> First, the series  $5x \bmod 12$  (5 10 3 8 1 6 11 4 9 2 7 12; 12 stands in for 0 in this case) is permuted through order-number multiplication by  $7 \bmod 13$ , with the result that even-numbered ordinal positions (i. e., 2, 4, 6, 8, 10, and 12) move to the front of the succession, followed by odd-numbered ordinal positions.<sup>(34)</sup> Systematic rearrangement produces the twelve collections shown by [Table 2](#), each of which corresponds to a pitch-class in *Sospeso*'s all-interval, wedge-shaped series (9 t 8 e 7 0 6 1 5 2 4 3); I refer to this twelve-tone series as an "All-Interval Wedge," AIW for short. Columns in the figure feature a distinct integer succession (5 10 8 4 3 6 12 7 9 1 2 11) in various rotations.<sup>(35)</sup>

[23] The twelve collections form the basis for a network of nine  $12 \times 12$  grids. [Example 2](#) shows the mapping out of time-points in these grids.<sup>(36)</sup> Each rank in the grids corresponds to a pitch-class in the series, and each column corresponds to a distinct time-point in musical space. In the system, pc-9 initially assumes time-point 1, pc-t assumes time-point 2, and so on. The twelve numerical collections control the timing of subsequent pitch-class entries. The second entry of pc-9, for instance, occurs after five empty time-points, then ten time-points, and so on. Following its own scheme, pc-t enters after ten empty time-points have passed, then eight, and so on.

[24] I shall refer to the configurations in [Example 2](#) as "Position-Grids."<sup>(37)</sup> Serial pitch-classes begin at Position-Grid I and end at Position-Grid IX in immediate succession because of the technique, which creates a constant value of 90 time-points for each pitch-class (empty spaces equal the sum of the integers 1 through 12, plus 12 for each pitch-class's occurrence). The scheme also controls when pitch-classes have coincident attacks with others. For example, time-point 7 of Position-Grid I contains pc-9 and pc-6 together, while time-point 9 contains pcs-5, -7, and -e together. The position-grid system serves as a proto-score for No. 4, with pitch-classes rendered as pitches (i. e., without octave replications) whose registral placement projects the AIW's signature shape.

[25] Through order-number multiplication No. 4 offers a novel, serial type of canon, in concept and realization. The self-replication inherent in the position-grids has an ancestry in types of imitation used by traditional canons. The connection is poignant because Nono and Bruno Maderna studied Flemish polyphony extensively. Several times Nono cites his studies at Venice's Biblioteca Marciana and of his "games" solving

puzzle canons in particular. In addition, Dallapiccola's own canon-based music influenced him greatly. The grids activate all twelve pitches simultaneously to produce a twelve-voice canon, and the permutations ensure that each pitch has its own, distinct pattern of acceleration and deceleration between entries. The single rearrangement scheme creates continuity from one voice to the next, thereby providing the same type of cohesiveness afforded by strictly imitative repetition. In line with their canonic heritage, I propose the provisional term "permutation canon" for the position-grids' inherently imitative structure.

[26] The position-grids map out two orchestral layers in No. 4, one for the strings and the other for the remainder of the instruments ([Example 3](#)). Durations in the non-strings follow values in [Table 2](#) by columns—not by ranks—proceeding from bottom to top. Values are applied to time-points left to right so that the first twelve time-points possess duration-factors of 11, 2, 1, etc. The second column in the rearrangement scheme, read bottom to top (5 11 2 1 9 7 etc.) determines the durations of the next twelve time-points in the score, and so on.

[27] The strings generally play long, sustained notes against short notes in the winds, brass, and percussion that are determined by the grid system. For instance, pc-9 occurs in the vibraphone at measure 240 and in the flute at measure 243. Bass 1 ties the two notes together and coincides with the vibraphone's entrance and the flute's exit. Cello 2 performs the same function for Clarinet 1 at measure 241 and Marimba at measure 244. Each pitch appears thirteen times in the system, an odd number, with only the first three and final three pairs of time-points being joined by the strings. The seventh occurrence of each pitch lacks doubling. <sup>(38)</sup>

[28] Material for two musical dimensions, pitch and duration, is thus plotted out for No. 4 in one sweeping, serial gesture. The unity of design accounts for the movement's dynamics, which create a large-scale hairpin. The non-strings essentially follow a dynamics series (ppp, p, mp, mf, f, fff, fff, fff, f, mf, mp, p, ppp) that determines dynamics for each successive time-point within each pitch level in the position-grid system. Each pitch's first appearance sounds at ppp, its second at p, and so on, with its three central appearances having the marking fff. At this point the dynamics reverse themselves in a gradual decrescendo. Shadowing notes in the strings echo the dynamics of the notes they connect; if the notes possess two different indications, the shadowing instrument makes a transition from the first to the second. While dynamic elements might appear to create multidimensionally oblique motion with durations and pitches, they actually form another serial component within the position-grids, thereby traveling in unison with pitch and durations.

[29] In contrast to their usual disruptive effect, beat-divisions articulate multidimensional unity even further by also forming a serial component of the position-grid system. The movement employs a single beat-division series (3, 4, 5, 7, 7, 5, 4, 3), which determines beat-divisions for each grid in the position-grid system, with Position-Grid IX appended to Position-Grid VIII. Beat-divisions gradually decrease in size for Grids I through IV. At the mid-point of the movement, beat-divisions increase in size so that all notes governed by Grids I and VIII/IX receive the beat-division 3, Grids II and VII receive beat-division 4, and so on. In a symmetric pattern, durations accelerate and decelerate proportionally (3:4:5:7), underscoring the movement's hairpin dynamics.

[30] All told, No. 4 of *Sospeso* follows its serial material with minimal intervention, with only the precise instrumentation of the non-strings left open to Nono's "liberal fantasy." Instrumentation in the strings, in contrast, supports the canonic scheme. The outermost position-grids feature cello and bass soli in harmonics, and grids work their way inward with solo upper strings and then tutti. Non-string instruments seem to be chosen for their ability to play in the AIW's range and, in the case of percussion, for their muted timbres.<sup>(39)</sup> While brass instruments inevitably diversify the timbral palette, coloristic effects are lessened by all non-string instruments playing tremolo rather than sustained notes. Beyond the inescapable variations in instrumental timbres, the music displays exceptional multidimensional unity. Moments of unity such as this would prove to be exceedingly rare in Nono's compositional output.<sup>(40)</sup>

## No. 1

[31] While No. 1 uses the same position-grid system as No. 4, it achieves contrast not only in its sound but also in the types of intervention it exhibits. The position-grid system governs pitch content, except that pitches now occupy various octaves. Wolfgang Motz traces the evolution of the first movement from serial genesis to final form, giving a preliminary discussion about the use of No. 4's content in regard to instrumentation and registral placement.<sup>(41)</sup> I shall devote some time here to examining the movement in greater length and detail than Motz does in his brief study. As I shall show, both primary and secondary systems undergo manual overrides in No. 1, producing a multidimensional density that No. 4 lacks. Further, the movement breaks off before its serially determined conclusion, true to the idea behind the word "sospeso," which translates as "interrupted" or "suspended."

[32] Extensive systemic overrides by rest-displacement and beat-division distort the serial order of pitch-classes without actually transforming

the position-grids themselves. [Example 4](#) shows mm. 7–17 of No. 1 (mm. 1–6 are shown by [Example 1](#)). Boxed areas may be clicked to summarize pitch-class, beat-division, rest-displacement, and dynamics content. [Example 5](#) shows the content of the nine boxes as they correspond to the position-grid system. Nono appears to start the movement in strict observation of systemic beat-divisions and rest-displacements. Both systems undergo manual override by the end of the movement, whose content [Table 3](#) shows. Pitch content from [Position-Grid VII](#) is applied to only two beat-divisions at most within chords, with two beat-divisions undergoing diminution (6 and 8). Rest-displacement values are limited to the range 0 to 3 rather than 1 to 5, and their usage does not suggest a systematic permutation of their order. Nono thus assumes a substantial degree of freedom, as if to let the music evolve, *quasi una fantasia*, to this point.

[33] Manual override produces contrapuntal complexity between dimensions and creates fluctuations of speed within dimensions. For instance, [Box 1](#) contains the first duration factor in the series (5) exclusively. The content depicted by [Box 2](#) follows in similar fashion as Box 1, with a single duration factor unifying the group.<sup>(42)</sup> Subsequent boxes are devoted to further members of the duration-factor series, with the pace speeding up (as in Boxes [3](#), [4](#), [6](#), and [9](#)) and slowing down in turns (as in Boxes [5](#), [7](#), and [8](#)).<sup>(43)</sup> In contrast, pitch-class material holds steadfast to changing with each successive time-point.

[34] Dynamics contribute added multidimensional density. In all, dynamics do not show the influence of any system analogous to those used for pitch-class placement and duration allotment. However, dynamic markings do occasionally mirror each other, such as mf-ppp and ppp-mf in [Box 8](#) (m. 13). The content distribution also divides the movement into two large parts, coinciding with the juncture between the second and third traversals of the position-grid system. For the final two position-grid traversals, dynamics content is limited to single elements: ppp, p, mp, mf, f, fff.<sup>(44)</sup> The first two position-grid traversals use single elements except for fff, and pairs of elements arise in every conceivable combination (such as ppp-p or mp-mf). Because of the delayed entrance of fff until the third grid traversal, the second half of the movement achieves a generally louder dynamic than the first. The dynamics distribution also creates smaller formal regions, such as at [Box 9](#) (m. 16), where all markings fall at the lowest levels (ppp and p). The rate of change for dynamics thus occurs at its own pace, sometimes unifying groups of notes (Boxes [3](#) and [9](#)) or diversifying them (Boxes [1](#), [2](#), and [7](#)).

[35] The movement implements the position-grid system roughly four times. Midway through the second implementation of [Position-Grid V](#), duration

material traverses values by columns in [Table 2](#) rather than ranks. Duration material essentially remains fixed at this point, since the columns produce rotated versions of a single integer succession. During the final course of the position-grid system, many pitch-classes fail to appear, thereby accelerating the consumption of pitch material. Lastly, the final measures of the movement only reach what seems to be the end of Position-Grid VII (see [Table 3](#)), with pc-e and pc-9 appended at the conclusion. In this light, No. 1 concludes abruptly.

## No. 8

[36] No. 8 exhibits as extensive a level of override as No. 1, also yielding great multidimensional complexity. Like No. 1, it too has an underlying canonic structure that systemic and manual overrides distort and obscure. The movement's duration factors undergo a procedure that produces the ten duration-factor collections shown by [Table 4](#).<sup>(45)</sup> A recursively-applied rearrangement scheme reorders the collection from its outermost ordinal positions (working from right to left) to its center.<sup>(46)</sup> Complete duration material (notated as fractional values with duration-factors as numerators and beat-divisions as denominators) for No. 8 is shown by [Table 5](#).<sup>(47)</sup> The resulting music uses only nine collections; a tenth collection, the integer succession 12 to 1, never makes its way into the music. Pitch-class material (i. e., the AIW) fuses itself to duration material to unify the two dimensions completely. At the tenth collection (after the first blank rank in the figure), individual ranks from Table 4 are applied in retrograde order from top to bottom. The final nineteen collections (after the second blank rank) form an exact retrograde of the preceding eighteen so that the thirty-six collections produce an overall palindrome.

[37] The music for No. 8, however, does not retain the symmetry of its serial material. First, Nono manually overrides serial values. Several individual durations (thirteen to be exact) do not match the rearrangement scheme. Of these, eight are very close (within one factor) to the scheme. The movement also omits two consecutive notes in the scheme from the second collection beginning at m. 535. Manual overrides exhibited here do not appear to contribute to multidimensional density, but their occurrence resonates with a spirit of extreme distortion in other realms.

[38] Rest-displacement systemically overrides the ordering of durations. Box 10 of [Example 6](#) contains the first four members of the AIW (pc-9, t, 8, and e). The rest-displacement system, shown by [Boxes 10-15](#), causes the pc-e (3/7 rest) to appear before the pc-8 (2/3 rest) rather than after. By the end of the movement, the rest-displacement system becomes manually overridden. [Table 6](#) shows rest-displacement values for the final nine

statements of serial material (i. e., the final quarter of the movement). The system generally governs pitches in pairs rather than individually. Beginning at m. 532, for example, the first note in each pair shows incremented rest-displacements. The second note in each pair arrives 3 duration factors after the first (for pcs-9 through 1), then 4 (pcs-5 and 2), and then 5 (pcs-4 and 3). The final four pitch-classes in each series generally follow the preceding eight at some distance, I have calculated their displacement from a distinct point of reference. The mode of displacement changes for each subsequent twelve-tone collection, as well as within each collection between the first four pairs and the final two. <sup>(48)</sup>

[39] Beat-divisions distort the inherent symmetry of serial material even further. [Example 7](#) shows the progress of duration material throughout the movement. Peaks and valleys depict the average duration for each of the thirty-six collections; the vertical axis depicts notated durational values in terms of quarter-note lengths. Collection 26 (beginning within m. 528) features a dramatic dip in average duration because the smallest beat-division (1/7) remains active for the entire collection. The dip in Collection 26 does not find itself reflected in the movement, and thus the contour of the graph exhibits a noticeable asymmetric shape.

[40] Other dimensions enhance the through-composed nature of the movement. [Example 8](#) shows the average dynamic range for each collection throughout the movement. The vertical axis depicts a linear scale of nineteen implemented dynamic indications, where 1=ppp and 19=fff. Intermediate values are ranked according to the loudest dynamic marking that is used; for example, the indication p-f is ranked below p-fff. As can be seen, several large-scale crescendi and decrescendi carve out an asymmetric pattern, although Collections 10 and 27 appear to invert each other. Octave placement also resists symmetry. [Example 9](#) shows the average octave range for each collection (octave ranges correspond to ASA pitch designations; i. e., middle C begins Octave 4), again revealing an asymmetric pattern. For instance, the dip in Collection 30 seems at odds with the peaks in Collections 10 and 26. Finally, instrumentation even seems to contribute to the global defiance of symmetry. In an effort to convey instrumentation as an average value, I have assigned the values 1 through 28 to each instrument in the orchestra, grouping them by family (i. e., winds, brass, and percussion; strings do not play in this movement). [Example 10](#), whose vertical axis only ranges from 1 to 25, shows the average timbral value per serial collection. Wind instruments (flutes, oboes, clarinets, bassoons) hold the lowest values (1 through 11), horns occupy medium values (12 through 17), trumpets and trombones assume high values (18 through 26), and timpani possess the top values (27 and 28). A prevalence of one instrumental family will affect the average value. For



instance, the deepest valleys in the figure mark sections devoid of or sparsely populated by brass instruments (Collections 6, 17, and 26). Similarly, a high average value signals the presence of many brass instruments (Collections 8, 11, 14, and 30). All told, the orchestration does not establish a symmetric, or even a recurrent, pattern. Further, individual dimensions do not synchronize with each other.

[41] The high degree of intervention forms a multidimensional texture based on fundamental, inner conflict. In their initial state, pitch and duration values exhibit inter-dimensional unity and symmetry. As in No. 1, secondary systems override primary material, and both primary and secondary systems become overridden during the course of the music. The movement also shows what effect Nono's control over beat-divisions, dynamics, registral placement, and instrumentation have on distorting the serial palindrome in an environment of extreme manual override where even serial values themselves undergo alteration. The conflict, which a simple hearing of the piece does not reveal, plays a significant role for the piece as a whole.

### **Wordless Music**

[42] As mentioned previously, Nono did not discuss the instrumental interludes directly. However, works preceding and following *Sospeso* provide a meaningful context for its instrumental interludes. The second movement of Nono's first published choral work, *Epitaffio auf Federico Garc 韃 Lorca* No. 1 (1952) is composed for flute and small orchestra, thereby not setting any words to music. Rather, textual verses appear at formal dividing points in the score so that only the performers know of their presence. The absorption prefigures the string quartet, *Fragmente-Stille, an Diotima* (1979–1980), whose Hölderlin fragments are printed in the score but not delivered. The stage work *Prometeo, tragedia dell' ascolto* (1984/1985) is based on Massimo Cacciari's mixture of texts by Hölderlin, Aeschylus, Rilke, and others, many of which are never enunciated in performance. Boulez creates a similar effect during the "Commentaires" of *Marteau sans Ma 類 re* (1957), in which the texts are also not enunciated. All of these compositions have ample precedent in previous centuries, such as Beethoven's String Quartet Op. 135 or the symphonic poem repertoire, to name only a few examples. *Sospeso's* instrumental interludes, as I hope to show, belong to the current of wordless music that projects textual content.

[43] The multidimensional textures of the interludes carry the brunt of their textual gesture. Implemented without substantive intervention, serial material would have generated three canonic interludes. However, pervasive systemic and manual overrides ensure that only No. 4 attains

realization as an unimpeded permutation canon. The canon provides a crucial moment of silence at this position, a silence not only achieved by the absence of text and singers, but also by the complete unity of motion among the pitch, duration, and dynamics dimensions. That is, the lack of multidimensional counterpoint creates its own type of silence. <sup>(49)</sup> In terms of *Sospeso*'s large-scale multidimensional organization, the distorted textures and multidimensional complexity in Nos. 1 and 8 create somewhat noisy regions that frame an expanse of silence. Space does not permit me to explore the meaning of this gesture fully, but suffice it to say, No. 4's canonic silence has significant bearing on the flow of textual ideas throughout the composition.

[44] No. 4 falls strategically between the matter-of-fact statements of No. 3's textual matter and the departing laments initiated by the letters in No. 5. At first glance, No. 4's silence might appear merely to exhort contemplation on the texts in Nos. 2 and 3 as a type of commentary reminiscent of a sacred cantata, but in light of its position at the work's center, its meaning for the movements ahead should also be considered. Further, Nos. 1 and 8 serve parallel functions as preludes to the choral movements in Nos. 2 and 9, with the latter movement recapitulating the former's textual ideas of transcendence. The formal layout of textual themes thus follows a five-part symmetrical scheme: prelude-chorus (Nos. 1-2), exposition (No. 3), silence (No. 4), lament (Nos. 5-7), prelude-chorus (Nos. 8-9). The music fills the scheme at varying speeds, much as the dynamics and duration material of No. 1 slowed and hastened during its course. For instance, the "lament" region of the scheme fills the space of three musical movements, while the "exposition" condenses its ideas into a single movement. In the end, the canonic implications of the scheme do not attain realization; Nono manually overrides its symmetry, which makes the pristine canon of No. 4 even more remarkable.

[45] By immediately following No. 3's exposition of imminent demise, the multidimensional silence achieved by No. 4 might be considered as an analog to death, or submission to death, so that the music appears to re-enact what actually transpired for "tutti di loro" [all of them]. <sup>(50)</sup> Poignantly reinforcing this gesture, Nono quoted No. 4 in the operatic work *Intolleranza 1960* at a moment that describes the outcries of victims during interrogation proceedings. In contrast, Nos. 1 and 8 begin a process of transcendence by resisting the symmetrical pull of their serial material. As parallel gestures, Nos. 2 and 9 conclude with codas whose duration material possesses palindromic symmetry, but whose implementation conspicuously avoids it. The transcendence finds resonance in No. 9's main text-setting innovation, which apportions components of individual words to several performers so that the words

attain new life on a collective plane of existence. The transcendence thereby affirms the themes presented by Thomas Mann's forward to the edition of letters that inspired *Sospeso*, which Nono included as an integral part of the composition's textual matter:

[46] [...] der Glaube, die Hoffnung, die Opferwilligkeit einer europäischen Jugend, die den hohen Namen der ‚résistance‘ trug, des international-einmütigen ‚Widerstandes‘ gegen die Entehrung ihrer Länder, gegen die Schmach eines Hitler-Europa, den Greuel einer Hitler-Welt, die aber mehr wollte als nur widerstehen, die sich als Vorkämpfer einer besseren menschlichen Gesellschaft fühlte [...]

[47] [...] the faith, the hope, the readiness for sacrifice of a young European generation, which bore the fine name of the 'résistance,' of internationally unanimous resistance against the disgrace of their country, against the shame of a Hitlerite Europe and the horror of a Hitlerite world, though who wanted more than simply to resist, feeling themselves to be the vanguard of a better human society [...]<sup>(51)</sup>

[48] In the end, *Sospeso*'s multidimensional considerations shape serial material to such a considerable degree that a strict serial analysis of the piece not only becomes frustrated, but also obscures the contribution that the interludes make to the composition's textual content. The activation of systemic and manual overrides produces novel textures in multiple musical dimensions, which paved the way for Nono's electronic experiments later in his career. Thus, what had originally served as overrides in his serial music became a technique for multidimensionality in later pieces, and ultimately, the poetics of "il suono mobile."