BERG'S SEVENTEEN FOUR-PART CANONS:
The Mystery Solved

In the second issue of the Newsletter, in commenting upon Berg's notes on the *Lyric Suite* which he sent to Schoenberg, we were completely at a loss to explain what Berg meant by the "seventeen possible four-part canons" in his discussion of the set-forms which he used in the *Allegro misterioso* movement. We were therefore especially pleased that Dr. Jan Maegaard, who recently joined the Society, successfully took up the challenge. Dr. Maegaard, who teaches at the University of Copenhagen and was Visiting Professor of Music at SUNY at Stony Brook this past spring, is the author of *Studien zur Entwicklung des dodekaphonen Satzes bei Arnold Schoenberg* (3 vols., Copenhagen, Wilhelm Hansen, 1972), a definitive treatise on the origins of serial techniques. We gratefully print here a translation of the relevant portion of Dr. Maegaard's article, "Ein Beispiel des atonalen Kontrapunkts im Frühstadium," of which Dr. Maegaard sent us an advance copy; we extend also our thanks to *Zeitschrift für Musiktheorie,* which printed it (Vol. 3, No. 1, pp. 29-34, 1972).

Alban Berg's four-part canons, which he also called "diminutions" (*Engführungen*), may result therefore in rhythmic displacement of the four set-forms so that in no case do simultaneous octaves appear. In fact, there are exactly seventeen such canonic combinations which involve four voices, if, as one might infer, parallel movement of two voices must be avoided. From today's theoretical standpoint, the determination of these combinations is no great problem.

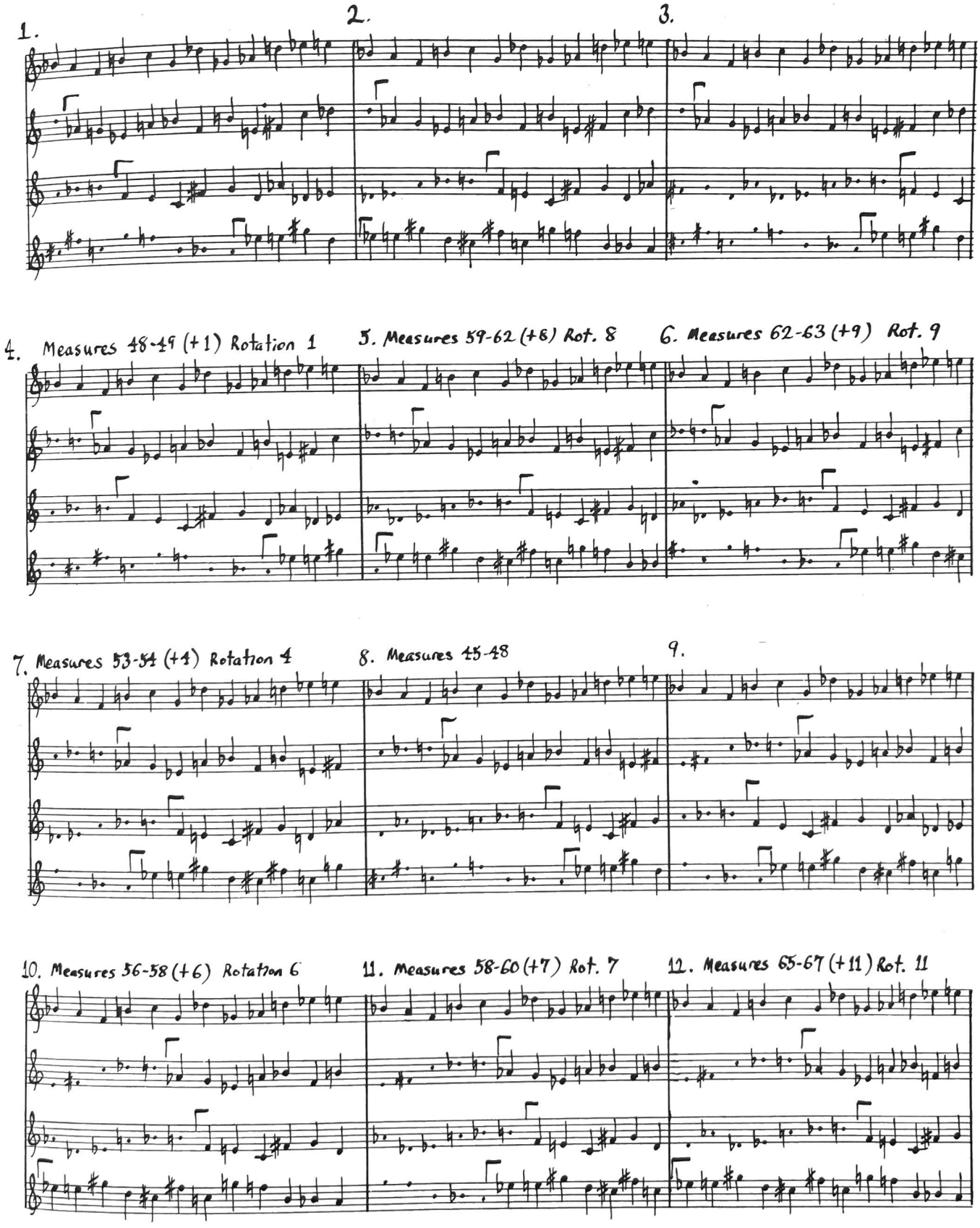
To do this, one first arranges two voices one under the other and notes which combinations are possible. Against each of the possible ones, the third voice is fitted note by note, and the possible three-voice combinations are determined. Finally the combination with the fourth voice is tested, and after a systematic elimination of the octave-duplicating combinations, there remain in the end seventeen possible canons. (See Example 1)

A comparison with the full score of the passage in question reveals: 1) that not all seventeen canons, but rather only twelve, are used; 2) that among these twelve come some which do not count as "possible;" and 3) that as a result avoidance of simultaneous octaves in an inner voice is neglected (perhaps unintentionally).

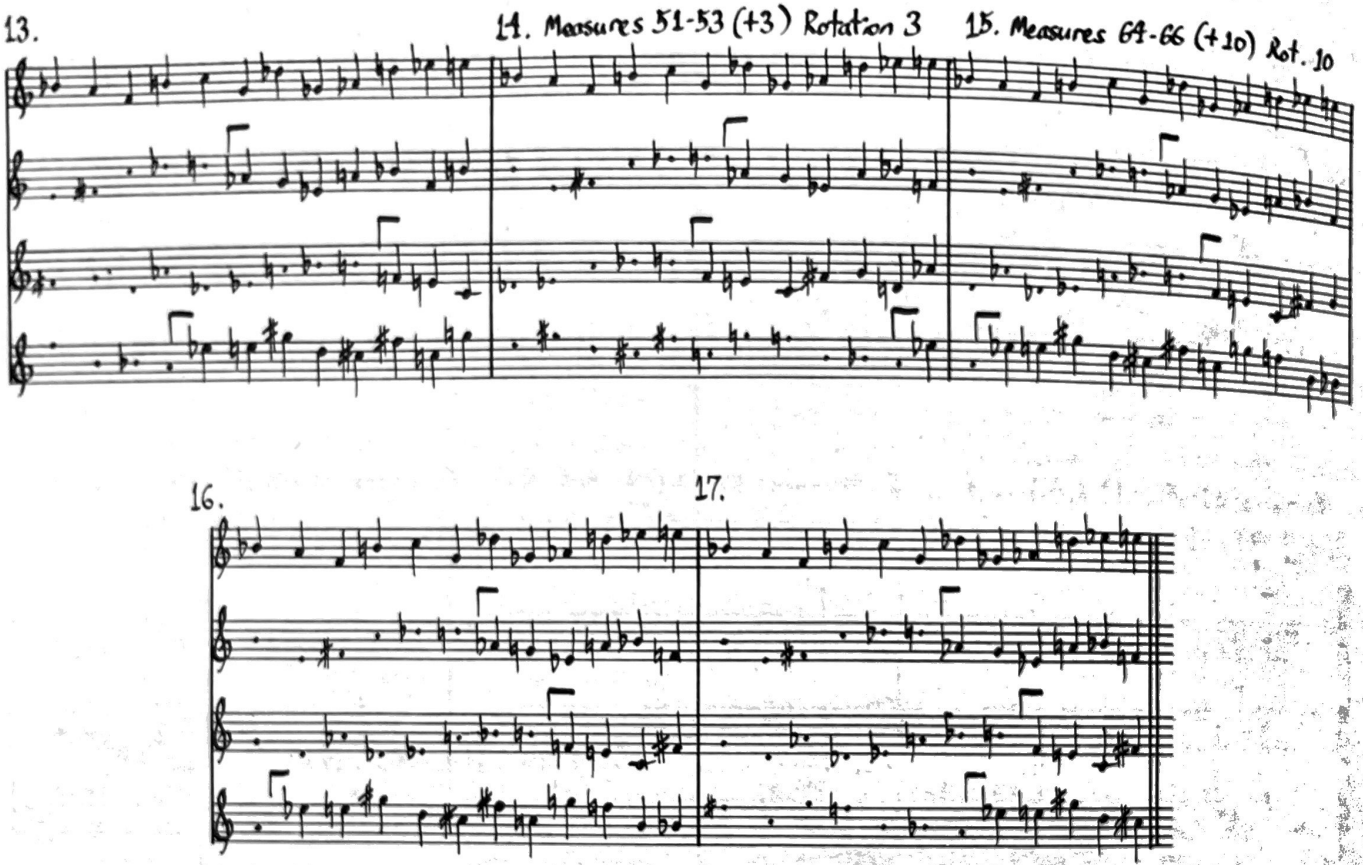
With respect to 1) above: from measure 46, twelve canons appear consecutively, one immediately after the other, but in such a way that at the beginning of each canon the transpositional interval is a semitone higher, and furthermore in such a way that all four sets are rotated one note with each new transposition point. The first canon, measures 45-48, begins with the first note of the set-form designated here (Example 1, Canon No. 8). The second canon (No. 4) is transposed a semitone upwards (+1) and each voice begins with the second note (Rotation 1). The third canonic entry (No. 1) is +2-transposed and begins with the third note (Rotation 2) in all voices, and so forth. After twelve canons (measure 67), all transpositions and rotations are complete, and there follows a transition to the Trio, measures 67-69. There are no further canons in this passage.

With respect to 2) above: only eleven of the cited canons are used. In the sixth cycle, measures 54-56 (Transposition +5, Rotation 5), a canon appears which would produce simultaneous octaves with another voice, were not both tones separated from each other through rotation (Example 2). If, then, Berg regarded this canon-type as "possible," it is difficult to discover which one among the seventeen possibilities in Example 1 he did not consider — because he did indeed calculate seventeen possibilities. (See Example 2)

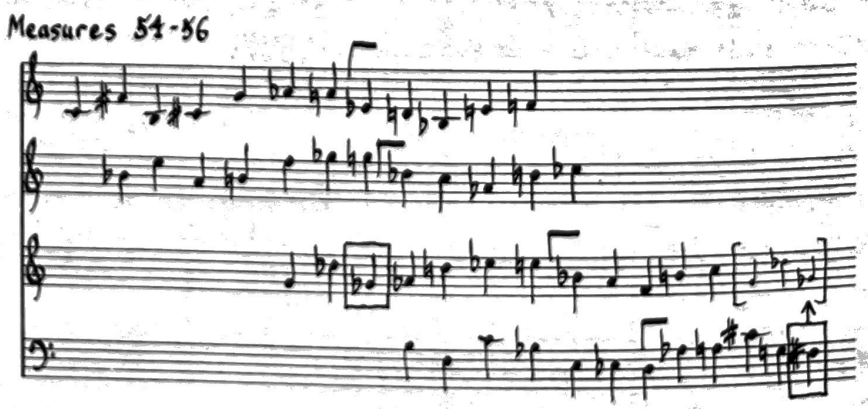
The 17 Canons



EXAMPLE 1



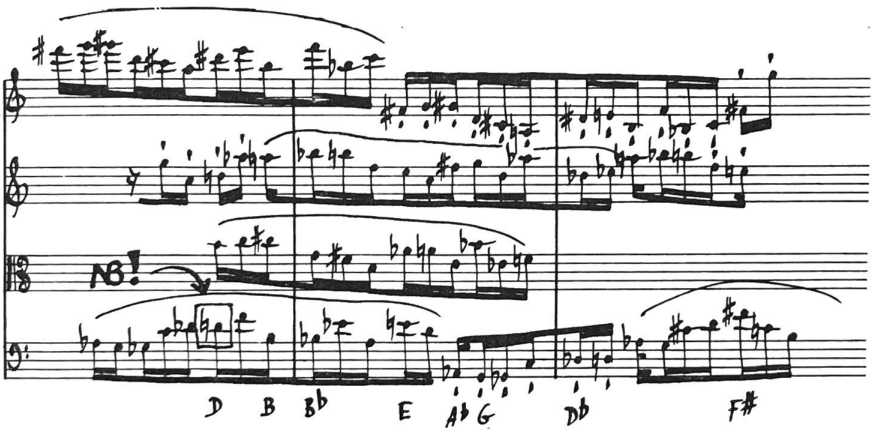
EXAMPLE 1 (Continued)



EXAMPLE 2

With respect to 3) above: in the tenth cycle, measures 62-63, in the cello part, the extra note D is stuck into the sixth place (measure 62, 7th sixteenth-note), which causes no less than eight simultaneous octaves or unisons (Example 3). Already, with its entry, it coincides with a D in the second violin from the preceding cycle

The rest of the statement of the row in the cello part is thereupon moved one sixteenth-note out of place to the right and the canon already begun (No. 6) is thereby vitiated, the pitch-classes B, B flat, and E falling together with the same pitch-classes in the other voices. (See Example 3)



EXAMPLE 3

In order to avoid rests in the individual parts between successive entrances in the separate canons, throughout the entire section, in all voices, the spaces are filled in continuously by evenly-played fragments of set forms. These are marked staccato, while legato slurs are written over the actually canonic rows. In the passage just described, there result three further conflicts of notes in octaves: A flat and G in measure 63 and D flat in measure 64. Finally, an F sharp in the first violin coincides with the same note in the following cycle. Thus there is a total of eight simultaneous octaves or unisons in three measures.

In the corresponding section (measures 98-100) in the shortened retrograde reprise, the same octaves recur together with the intruding D. This supports the hypothesis that the reprise material was derived by Berg not from abstract set material but rather from the real movement material already composed.

It is difficult to imagine that so many cases of this kind were intended in an otherwise octave-free area of the composition. In only one other place within the entire section do the same pitch-classes clash: measure 49, 9th sixteenth-note, G flat in first violin and viola.

(Translated by Joan Allen Smith and Mark DeVoto)