CONTRAPUNTAL TECHNIQUES FROM THE TIME OF ORGANUM DEFINED
AND EXHIBITED IN THE WORKS OF HINDEMITH

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STATEMENT OF THE THESIS

It is evident that twentieth-century composers tend to write "linewise" or "horizontal-wise," stressing contrapuntal rather than harmonic practices. Some time spent in looking through and listening to music of our era easily reveals the excellent possibilities of melody-against-melody writing. Because of the importance placed upon contrapuntal writing by various composers, a knowledge of such line-wise techniques is useful in the understanding of contemporary music.

It shall be mentioned that contemporary writing is not exclusively contrapuntal, and that harmonic considerations are not to be entirely ignored. At times the two may be so closely related in contemporary practice that a distinction as to which principle is of prime importance is difficult to make. Schoenberg himself says on this subject:

The mutual saturation of these two principles, harmony and counterpoint, is so complete, their distinction so incomplete, that every result derived from voice-leading may be a harmony, and every harmony may have its foundation in voice leading. Apparently we are turning to a new era of the polyphonic style, and chords will be justified through melodic content alone...

There are those people, usually in the lay world, in addition to the ultra-conservatives in the field of music, who claim that music is getting so far "out of hand," away from the music of the great masters, that there seems to be no connection between the present period of music and the past. It should be obvious to a student of music that the basic techniques of contrapuntal writing, such as stretto, inversion, invertible counterpoint, etc., have not changed but that aspects

1. Marion Bauer, Twentieth Century Music, p. 225.
and treatment have undergone a change, outstanding being the "newer" theory approach of consonance, dissonance, and freedom in melodic considerations. In other words the foundations have remained but the strict common-practice boundaries have been pierced. It is the purpose of this thesis to exhibit similarities between present-day contrapuntal practices and music of earlier periods.

The music of Paul Hindemith is used as the example of present-day composition; his music is such that melodic textures play a great part, if not the greatest part of all his writing. As Max Graf comments upon Hindemith:

> For him music was above all a play of lines
> ... To Hindemith counterpoint became the import
> of music... The musical lines that he inter-
> weaves in counterpoint fashion are not bound by
> trial harmonies, they are entirely independent
> and free.²

Some opposition may be seen to the above statement when one considers Krenek's view of Hindemith's writing:

> He tries to pave the way to a slightly more
> liberal interpretation of musical means. Yet
> both in theory and in practice Hindemith's pro-
> gressive orientation is subject to doubt. He
> is not quite progressive enough to break away
> altogether from traditional methods... In
> spite of Hindemith's wish to pave the way to
> a progressive type of music, his theory neces-
> sarily results in favoring the basic facts of
> tonality--the major triad and simple harmonic
> relationships--exactly as in the old tonal music.³

Certainly such a comment would be in order from one who is an advocate of a radical change in the theory of music, as is Krenek.


³. Ernst Krenek, Music Here and Now, pp. 198-200.
However a decision can easily be made, upon some association, that Hindemith's music reveals much of contrapuntal practice. This is true whether or not he is "entirely independent and free."

The sampling of Hindemith's music in connection with the afore-mentioned techniques is taken from both his instrumental and vocal repertoire, with emphasis on the former. Works for chamber orchestra, sonatas for solo instruments with piano, string ensembles, piano literature and vocal works are included.

The analysis of the twelve fugues of the *Ludus Tonalis*, which has been appended, gives more complete evidence of the frequency of Hindemith's use of contrapuntal techniques.
CHAPTER I
INTRODUCTION

Counterpoint is:

The name given to the art of combining melodies, or (more strictly) to the art of adding melody to melody. The term is often applied to the added melody itself, when a subject invented to accompany another subject is called its counterpoint. The latter meaning suggests more nearly the origin of the word.

Before modern notation came into being, dots or points were used to indicate pitch relationships. Thus a composition in which point was set against, or counter to, point, was called counterpoint.

In a general way the word Counterpoint is often applied to music, of any school, which shows marked melodic independence of parts, such as may be found, for example, in all fugal movements and in most choral works of any magnitude. But in the study of music it is the term still given to a particular and restricted part-writing, in which attention is expressly directed to the melodiousness of every part, and for this purpose the available harmonies are specially and rigorously limited.

It is perhaps more comprehensive to say that in part-music of every kind, simple or complex, ancient or modern, when two or more parts conspire to convey one idea, the result is harmony; when, while still conveying one idea, each part preserves its own melodic entity and conveys also its own idea, the result is counterpoint.

2. Ibid., pp. 737, 738.
A. Organum

Organum, in the strictest sense, is the technique of parallel motion writing in which the vertical intervals, fifths, fourths, and octaves, remain constant.

"Symphonious" and "Polyphonic" were two terms used during the earlier stages of organum to classify music. Wooldridge distinguishes between the two in that the former consists for him of music in which only the fourth, fifth, octave, and certain compounds thereof (e.g. elevenths, twelfths, etc.) are regarded as consonances. The original meaning of Symphonia was a "concord of sounds," and the fourth, fifth, and octave were, in fact, consonances for both the Greeks and the medieval "symphonists"—but from a different point of view. Basically, the intervals constituting the consonances were melodic with the Greeks, harmonic with the "symphonists". Such modern writers as draw a line between the two distinguish polyphonic from symphonic (symphonious) music chiefly by its admission of the third and sixth as consonances.\(^3\)

Why the fourths and fifths should be the first intervals to appear in Greek and "Symphonist" music is answered by several speculations.

A first theory is due to the order of tones in the overtone series, the octave, fifth, fourth, and third. It has been claimed that the intervals appearing in the series of overtones are accepted by the ear as harmonic consonances in the order in which they occur.

Another explanation is offered by the natural ranges of the four main classes of human voices, which, roughly speaking, lie at pitch

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levels a fifth apart from one another, in consecutive order from bass to soprano.

Organum has been regarded also as a product of the semitoneless pentatonic scale. The five degrees of this scale have two auxiliary tones, as the seven degrees of our diatonic scale have five chromatic tones to which ornamental roles may be assigned. Organum went hand in hand with the use of ecclesiastical scales just as a body of part-music, in which unisons, octaves, fourths, and fifths are the basic intervals, has co-existed with the employment of the pentatonic scale in China.

A fourth view, expressed by Gastoue, sees in the two primitive parts of vocal organum as imitation of two-part music played on the organ. Since vocal singing antedated the organ, another primitive instrument might have been substituted. There are pros and cons to this view.

A fifth view arises from the practice of Gregorian chants as is expressed by Dom Anselm Hughes:

One of the new features of the sequela-composition is the repetition of a melody at the fifth above; .... another feature is that the phrases are repeated twice each, by alternative sides of the choir presumably, or at least by cantors and chorus. And from the repetition of a melody at the fifth above by a different set of voices, to the simultaneous performance of that melody by the two sets of voices, at the interval of a fifth, is a very short step. Yet we may perhaps see in that step the actual birth of harmony.4

For a detailed account of what organum was let us imagine a group of voices singing a Gregorian melody, and a second group of voices doubling this melody at a fifth below throughout. The result would be a strict type of simple organum at the fifth or diapente. The first

4. Ibid., p. 251.
group would have the *vox principalis*; the other groups, the *vox organalis*. If, in addition, the *vox principalis* were doubled at the octave below and the *vox organalis* at the octave above, we would have strict composite organum at the fifth. The strict type of simple and composite organum at the fourth or diatessaron would result from substituting the interval of the fourth for that of the fifth.

Ex. 1

Another account of organum is that described by Guido d'Arezzo with the strict forms apparently still esteemed but the free forms seemingly preferred. In the latter, oblique motion was used to avoid tritones and, to keep the voices in a comfortable range. Organum at the fourth is used; organum at the fifth is no longer allowed. No example employs more than three voices: a *principalis*, an *organalis* below it, and a doubling of the *organalis* an octave higher; but further doublings at the octave are possible. No interval larger than a fourth is permitted between the *principalis* and *organalis*; the minor second is prohibited in a free organum.
Occursus is an outstanding feature of Guido's organum, i.e. the "coming together" of the two voices in the cadence group, ending with a unison, in free simple organum.

Contrary motion was used by Guido but not especially recommended by him.\(^5\)

The organum described by John Cotton differs in that all traditional consonances were used—the unison, octave, fourth and fifth. Contrary motion became important, although parallel motion is not forbidden; crossing of the parts is desirable; two or even three notes in the vox organalis are permitted against one note of plainsong. Guido, it may be noted, favored the reverse, i.e., more than one note in the principalis against one note in the organalis.\(^6\)

Ex. 2

Two main types of organum may be said to be represented by works from the monastery of St. Martial in Limoges; that in the "primitive" style, in which the writing was chiefly note-against-note, and that in

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\(^5\) Ibid., p. 259.

\(^6\) Ibid., p. 261.
which the sustained-tone style appeared. The latter may be subdivided, since this style was applied in some examples at the cadence only, while in others it was admitted in the course of the piece. 7

Ex. 3

Benedicamus Domino (St. Martial School)

B. Discant

"Discant" was the name associated with measured music as distinguished from unmeasured. In its original Latin meaning (Discantus), the word is synonymous with diaphony and organum. However, in the earliest treatises on part-music, "organum" stood for note-against-note writing; Cotton used this term in the same sense, but also for part-writing containing rhythmical embellishments. The Tractus de Musica used "discant" for the simpler style and "organum" for the more elaborate. We see a difference in the meaning of the two words as applied to part-music of approximately the twelfth century. As Reese states, "It is important, therefore, not to have too definitely preconceived an idea of the meaning of 'discantus' when approaching a 12th-century treatise." 8

7. ibid., p. 266.
8. ibid., p. 269.
Riemann gives the following summation of rules concerning the oldest directions for discantus; "The discanting part takes with the notes of the cantus firmus the fifth and octave alternately. The close is always made in the octave."

From an article written approximately 1260, by Franco of Cologne, discant is said to be a "consonant combination of different melodies proportionately accommodated to one another by long, short, or still shorter sounds..." Three divisions are made of discant; (1) one is simply sounded, (2) hocket style (disconnected) (3) copula style, is connected.

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CHAPTER II
GOTHIC AND POST GOTHIC PERIOD

A. Gothic Period

Entering the Gothic period of music, which includes the 12th and 13th centuries, we find that the polyphony of this period falls into four main classes: organum, conductus, motet, and cantilena. In these classifications the harmonic basis is more or less the same, using as consonances the unison, fifth and octave. Thirds were used, but in a manner which today would be called passing-notes. Organum continues in the same style so no further comment is needed at this point.

1. Conductus (Notre Dame polyphony)

The tenor is never in sustained-tone style. All parts, which may be as many as four, move in a more or less uniform rhythm. On the whole, the music of the conductus tends to progress more in block chords than does that of the organa (in this period, measured music) or motets. The conductus was variable in its forms, being largely influenced by the text.11

The technique of "hocketizing" was much used as an ornament in this form. Odington has this to say about the hocket: "A truncation is made over the tenor...in such a way that one voice is always silent while another sings."12 There are four kinds of hocket: duplex, in which two voices alternate with one another; triplex, two voices alternate with a third; quadruplex, four voices sing in turn; contra duplex, two

12. Ibid., p. 321.
pairs of voices alternate.

Trombone Sonata

2. Motet

In this period motet was a style and not a form, and was prevalent in 13th century polyphony. Its chief characteristics were (1) multiplicity of text, that is, several sets of words used simultaneously, and (2) a tenor with a pre-existent melody, disposed in repetitious rhythmic patterns. This motet differs from that of the period of Palestrina.

3. Cantilenae

This polyphonic style corresponds with the monodic which includes dance-songs with refrains. We have then, rondeaux, virelais, ballades, which were settings of monodic pieces. The rules for such writing were
that the melody was not always assigned to one voice, such as the lowest; the melody is either in the lowest voice and of a simple, folk-like character, with an elaboration in the middle voice, or in the middle part and less folk-like, the lowest part then functioning as a support and the voices crossing frequently. It seems as though the lowest part was not thought of as being possible of elaboration or embellishment.

All the voices had the same text in the cantilenae.

B. Post-Gothic Period

14th century French music was a transitional period concerning chord structures in that "fuller" harmonies were sometimes found, but polyphonic treatment was continued as before, i.e. built on perfect consonances. Philippe de Vitry was an important figure during this period. His works were characterized by a freeing of the melodies from the modal rhythm and setting them within what was called "new lyricism". His rules stated that two fifths, two unisons, or other perfect consonances of different pitches should not be written consecutively. Imperfect consonances may be written consecutively. Dissonant intervals were to be used only in figuration and not in true contrapuntal writing.

During this period the techniques of augmentation and diminution came into use. Augmentation is the practice of doubling the note values of a melody; i.e., quarter notes in the line became half-notes. Diminution is the direct opposite of this, quarter notes becoming eighth notes.
Syncopation was occasionally used, during this time, against a non-syncopated melody.

Another technique which arose during this age, and which has a firm place in contrapuntal writing, was that of cancrizans (retrograde imitation) writing. The line is the same from the end of a piece to the middle as from the beginning to the middle. This need not take place in only one line; the voices may be changed at the middle of a piece.
In Italian *trecento* music the main melody was on top rather than in the lower voice; this practice breaks away from the cantus firmus use. 14th century Italian music featured the characteristic of canon in what is termed *caccia* style. The normal Italian *caccia* consisted of three parts with the upper two in canon.

1. Gymel: This was the name applied to two-part writing in the British Isles during the 13th to the 15th century (by which later period it was named as such), in which frequent parallel successions of imperfect consonances were used. Writing in thirds and sixths, and in contrary and parallel motion was important. More is mentioned about this in the discussion of *fauxbourdon*.

Ex. 8

![Trombone Sonata](image)

a. **English Motets:** The English had seven classes of motets, as follows: (1) English discant, (2) the style with unborrowed melodies and with the top part dominating, (3) the style showing gymel influence, (4) the isorhythmic motet, (5) the motet that applies figuration to a
borrowed melody in the top part, (6) the declamation motet, (7) the double-structure style.

In (1) use of thirds and sixths is employed, but characteristic is the fact that the cantus firmus is in the lowest voice. When the cantus firmus is in the top voice, the name fauxbourdon is applied, this being the distinguishable factor between "English discant" and "fauxbourdon".

In formal structure the English discant consists of four sections alternately in two- and three part writing, engaging a free-flowing tenor.

Of (2) through (5) inclusive mention has been made elsewhere or these appear self-explanatory.

In (6) there is little difference between this and the old style conductus; it is mainly note against note, with melismas (many notes to one syllable) occurring at the ends of some phrases. All voices display a greater degree of rhythmic independence.

(7) involves simultaneous use of two borrowed melodies in a single piece, one in tenor and the other in discant; the tenor melody is usually from the plainsong repertoire, with "longish time values," as Reese states. The discant may be an embellishment of a secular melody.

2. Fauxbourdon: This term having been mentioned earlier, a slightly more detailed account follows with Heinrich Besseler's definition;

...two part pieces moving in 6ths and octaves with a third, unwritten, part to be supplied at the fourth below the treble. The optional addition of the middle voice presupposes that the structural intervals between treble and tenor can only be sixths and octaves, since any other interval would make it impossible to add the fourth by 'strict' improvisation.\(^\text{13}\)

\(^{13}\) The Musical Quarterly, 1952, Article by M. F. Bukofzer, p. 24.
The course of the contratenor must always follow that of the treble. The two-part form, called Gymel, is evidently the original form from which the three-part form developed.
CHAPTER III
IMITATION

In types of melodic recurrence, there are three:

(1) Repetition—recurrence of a melodic figure in the same voice, and on the same scale steps.

Ex. 10

(2) Sequence—recurrence of a figure in the same voice but on different scale steps.

(3) Imitation—recurrence of a figure in some other voice, either literal or with modification.
A. Types of Imitation

(1) Strict imitation: When the figure adheres strictly to successive interval progressions of the initial figure.
(2) Free imitation: Melodic or rhythmic form may be altered, but with the stipulation that the imitation be recognizable.

Ex. 13

(3) Imitation in Augmentation, and Diminution: The two terms were mentioned earlier.

(4) Imitation in shifted rhythm (per arsin et thesin): reproduction of the motive at a different part of a measure; the accented and unaccented tones of the original motive become somewhat interchanged in the imitation.

Goetschius lists some exceptional forms of modified imitation as follows: 14

18

(1) in the addition of intermediate embellishing tones,

(2) in the contrary motion of some single interval,

(3) transposition of a portion of the motive to a higher or lower octave.

(4) the partial application of certain essential modifications.

B. Stretto

Mode of imitation when the imitative part sets in before the motive is finished.

Two types of stretto are close and loose. The former refers to that imitative part which enters before half of the motive or subject has been stated: Loose stretto is such that the imitative voice enters when more than half of the subject has been announced.
C. Double (Invertible) Counterpoint

A technique in which the melody line can serve as the bass line, (in the same passage) with the bass line being substituted for the melody line. This may take place at the octave, tenth, twelfth, etc. and represent an interchange of parts.

The aforementioned techniques may account for the expansion or development of the musical structure during a composition. Especially is this so with episodic material, concerning which Geotschius states: "To all those portions of the polyphonic fabric where the motive is not present in either part, or is represented by only one of its fractional figures, the terms Episodic passages is applied."\(^{15}\)

These sections can be derived (1) by using some segment of the motive, (2) using all or some part of the counter-subject material of the motive, (3) a new figure may be used provided it is in keeping with the spirit of the work, and that it recur occasionally during the composition, or (4) the section may become somewhat independent in its build-up, away from the motive.

15. Geotschius, op. cit., p. 95.
Ex. 16
Subject

Ludus Tonalis, Fuga quarti

inverted
CHAPTER IV
FUGUE AND CANON

During the 16th Century, fugue writing was thought of as a process of construction in musical design and not as a form in itself. There were two main types of fugues:

(1) that in which the imitation is continued strictly throughout; in other words, a canon. The full description is fuga per canonem, "fugue according to rule". A more elaborate account of canon forms will be discussed later.

(2) that in which the writing becomes freer after the subject has been answered. Free counterpoint is emphasized after the subject material has become situated.

The difference between the two is the freedom allowed the composer, after the exposition, in his melodic treatment.

Concerning the fugue in general: "A fugue is a composition founded upon one subject, announced at first in one part alone, and subsequently
imitated by all the other parts in turn..."16

The parts usually number at least three or four.

The fugue form consists of the following pattern:

The Subject is announced in one voice with no harmonic accompaniment.

The Answer is a transposition, in a second voice, of the subject into the dominant key, a perfect fifth above, or a perfect fourth below the original key. Accompanying the answer is a Countersubject, which is a continuation of the opening voice. The Subject is repeated in the third voice and so on.

The term Exposition is applied to the section when all parts in the fugue have announced the subject material.

Episode is the term denoting connecting passages; e.g. between the Exposition and the Middle Section. Its main functions are those of continuity of material and of modulation.

Greater freedom is employed in the Middle Section with no restrictions as to order, interval, or key of entry, with, however, an avoidance of the original tonic and dominant. Stretto is the device often used in this section.

The Final Section consists of a return to the original key.

A Fughetta is a fugue of small dimensions and of little development. Fugato refers to passages written in the fugal style but in which the imitation is not at regular intervals of reply as to subject and answer.

Fugues may be written on more than one subject; a double fugue has two subjects; a triple fugue, three subjects.

The establishment of the fugue as a definite form of writing took place prior to Bach, but his fugues today serve as models for didactic purposes.

Considering Hindemith's twelve fugues in the *Ludus Tonalis*, an oddity in regard to the "academic" treatment of such writing should be mentioned. The entrance of subjects and answers in the exposition of the fugues do not always follow the academic pattern, \((1, 5, 1)\). The points of entrance for each fugue are as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Key</th>
<th>Subjects</th>
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<tbody>
<tr>
<td>1, in C</td>
<td>G, C, G</td>
<td></td>
</tr>
<tr>
<td>2, in G</td>
<td>G, C, D</td>
<td></td>
</tr>
<tr>
<td>3, in F</td>
<td>F, D, F</td>
<td></td>
</tr>
<tr>
<td>4, in A</td>
<td>C, E, G</td>
<td></td>
</tr>
<tr>
<td>5, in E</td>
<td>D, G, D</td>
<td></td>
</tr>
<tr>
<td>6, in E(_b)</td>
<td>B(_b), E(_b), B(_b)</td>
<td></td>
</tr>
<tr>
<td>7, in A(_b)</td>
<td>A(_b), E(_b), A(_b)</td>
<td></td>
</tr>
<tr>
<td>8, in D</td>
<td>D, A, D</td>
<td></td>
</tr>
<tr>
<td>9, in B(_b)</td>
<td>B(_b), F, B(_b)</td>
<td></td>
</tr>
<tr>
<td>10, in D(_b)</td>
<td>D(_b), A(_b), D(_b)</td>
<td></td>
</tr>
<tr>
<td>11, in B</td>
<td>B, F# , B</td>
<td></td>
</tr>
<tr>
<td>12, in F#</td>
<td>C# , F#, C#</td>
<td></td>
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In all but the second fugue does the third entrance take place on the octave of the original tone. We see also his use of the third, fourth, and sixth, along with the fifth as choices of intervals for
answers. The same freedom of interval choice for answers can be observed throughout each fugue, as well as in the exposition.

A. **Canon Forms**

1. **Round-Canon**: This is the simplest application of continuous imitation, being usually a canon in the unison or octave, and seldom written for more than four voices. It is characterized by a continuous melody in phrase group form, and a return to the beginning.

2. **Progressive Canon**: This type adheres to the same principle of strict continuous imitation, but with entrances allowed at any other degree, and at a shorter time interval. Regularity of form is less distinctive.

3. **Two-Voice Canon, Unaccompanied**: The second voice, usually one measure behind the first, literally reproduces the line of the leader. This is usually in strict imitation, though it cannot be so in traditional music at other than the fifth or fourth.

4. **Two-Voice Canon, Accompanied**: The third part, depending upon its importance to the whole, may be above, below, or between the canonic voices.

   a. The third part may be unimportant, serving no purpose other than emphasizing rhythm, or harmony. Such an example may be seen on page 21 of the thesis. (Example 17). A further example of a three-voice canon with an accompanying fourth part is taken from Hindemith's *String Quartet*, Op. 10.
b. It may coordinate with the canonic parts borrowing its figurations from the canon itself.

c. The canonic treatment may be secondary to the third part, the latter assuming the essential role.

d. The accompaniment may be essentially harmonic in effect, either in broken chord style or in "block" chords.
5. **Double-Canon**: This type has two *leaders*, imitated by two *followers*; the number of canonic parts is four. It is rare to find an auxiliary part to this style.

An important stipulation is that both *followers* must agree with the *leaders* in entrance-relation, i.e., if a measure separates the first leader from the second leader, a measure must separate the first follower from the second follower.

![Ex. 19](image)

6. **The Triple-Canon and Quadruple-Canon** are less frequent than the previous types. The latter is practicable in double-chorus or orchestral writing. The style is the same as for double-canon, but involving six and eight canonic parts, respectively.

**Finite** and **Infinite** are two further descriptions of canon. The former consists of a discontinuance of imitation, once the pattern has been stated in each voice, in the last few measures of the leader.

**Infinite** refers to the kind of structure in which the voices may continue to repeat without change of material, as in the **round canon**.
Some oddities of canon-form to be considered are (1) Reverse Retrograde Canon, (2) Canon by Inverse Contrary Movement, (3) Circular Canon, and (4) the term that may be applied to that type of canon which can be worked in many different ways, Polymorphous Canon. It is known that Valentini worked the subject of a canon in 2,000 different ways!

In (1) the music is so constructed that when it is turned upside down it reads the same as when it is in its original position.

(2) is usually applied to music in which the theme is introduced by one voice and answered by the second voice in inversion and in contrary motion.

(3) is so constructed that the end of the theme modulates up or down, usually stepwise, and continues in this manner until the original key is again reached. A contemporary example by Quincy Porter on a poem by Ogden Nash (Barnyard Cogitations) modulates to a key a major third down and continues in this direction reaching the original key by the third modulation.17

An unusual type of canon which is ordinarily of no musical significance is the Riddle Canon, in which the performers must discover for themselves their place and interval of entry, as one might work out anagrams or crossword puzzles. In the 19th century this type of canon sometimes became a novelty of expression for mathematical, rather than musical-minded composers.

17. Modern Canons, Edited by Herman Reichenbach, p. 13.
CHAPTER V

SPECIES COUNTERPOINT

Brief mention only is made of the various kinds of species counterpoint. They are five in number and are described in the following manner:

First Species—note against note, i.e., one note of the counterpoint against each note of the subject. This is in the style of free organum employing perfect and imperfect consonances, contrary and parallel motion, each voice being melodically independent.

Ex. 20

Second Species—two notes against one; each note of the subject must be accompanied by two notes equal in value. Embellishments play an important part in this type: accented and unaccented passing and auxiliary tones, either diatonic or chromatic, and free anticipations.

Ex. 21
Third Species—more than two notes of equal value against each note of the subject. In general, harmony will be represented in each group of three, on the first or second note of the group, the third note being harmonic or non-harmonic. Greater freedom of embellishment is therefore possible.

In the case of three notes to one, classification is sometimes made in the Second Species. Some authorities concede it an elaboration of two notes to one, and some as a curtailment of four to one.

With four notes to one, the second, third, and fourth notes of the counterpoint may be either harmony or passing tones. An embellishing technique of frequent usage in this species is that of "changing notes," i.e., both auxiliary notes of a given harmony tone are used successively with a return then to the harmony tone.
Fourth Species—each note of the subject is accompanied by two or more notes of equal length, employing syncopation in the use of suspensions and ties in the added counterpart.

\[ S = \text{Suspension} \]
\[ T = \text{Tied note} \]
Fifth Species—this is considered florid counterpoint; the subject is accompanied by notes of various lengths. Some theorists regard this classification as a combination of the first four species, with some rhythmic mixtures like: \( \text{\textbullet \textbullet \textbullet} \), \( \text{\textbullet} \), \( \text{\textbullet \textbullet} \), or their equivalents in smaller note values.

This is the usual form species writing follows; i.e., composers seldom adhere to one species in their works; more often there is a judicious combination of several kinds, dependent upon the needs of a particular composition.

The following example shows a subject with added counterpoint in Fifth Species.

![Ex. 26](image)

When the subject itself is decorated in florid counterpoint Morris has this to say about the fifth species; "...it should be a puzzle to decide, from interval evidence, which was the Cantus Firmus and which the added part. This is admittedly a counsel of perfection." 18

CHAPTER VI
CONSONANCE AND DISSONANCE

A. Academic Viewpoint

To review, the unison, third, fifth, sixth, and octave and their compounds are consonances. The unison, fifth and octave are perfect consonances; the third and sixth are imperfect. The remaining intervals are dissonances.

Fux classified the fourth as a dissonance, but also shows how the fourth may be considered an imperfect consonance. In the following interval relationship \( \frac{4}{5} \) where the lower tone of the fourth is the fundamental tone, the fourth is considered a dissonance. When a new, or different fundamental tone is present, \( \frac{5}{4} \) the interval of the fourth is considered an imperfect consonance.

Dealing with the practice of direct, contrary and oblique motion, with consonances, Fux lists the following fundamental rules:

(1) From one perfect consonance to another perfect consonance one must proceed in contrary or oblique motion.

(2) From a perfect consonance to an imperfect consonance one may proceed in any of the three motions.

(3) From an imperfect consonance to a perfect consonance one must proceed in contrary or oblique motion.

(4) From one imperfect consonance to another imperfect consonance one may proceed in any of the three motions.\(^{19}\)

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Giovanni Martini reduces these rules to one; the only progression forbidden is the direct motion into a perfect consonance.20

**Tied notes and suspensions**

Any note may be tied over to another note that is not of longer time value than itself. A suspension results when the second note is a dissonance; otherwise, it is a tied note and free to move anywhere, i.e., within the realms of common practice. Two or more suspensions in succession are referred to as "chain suspension".

A suspended dissonance is not **free** in its motion; since dissonances require resolution, the normal one is made stepwise, downward, to the nearest harmony tone. Upward resolutions are sometimes possible (retardation) and made usually by the step of a semitone. The resolution may be made either within the same beat as the dissonance, or on the following beat, the latter being preferred.

Following are some examples of delayed and ornamental resolutions:

![Diagram of musical notation](image)

(a), (b) resolution delayed by the dip of a third; the intervening note is usually raised chromatically, if the third is major.

(d) the dip is to the nearest intervening note implied by the resolution.

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(e) merely an embellishment of (d).
(f) the jump is upwards because the resolution is also upwards.

B. Present Considerations

Up to this point, the material mentioned in this chapter concerns the common practice era. The theory viewpoints in regard to consonance and dissonance have undergone a change themselves, as did music in its entirety. Although this seems obvious, it behooves one to remember that contemporary music does have its roots in three or four hundred years of musical practice, and that newer aspects of consonance and dissonance are merely the logical outgrowth of such practice, extended and developed.

Concerning contrapuntal procedures of the 16th century, Jeppeson says: "Behind all the rules concerning dissonance treatment, there lies in reality the craving for complete, satisfactory harmony after the dissonance."\(^{21}\)

Certainly this is so in present day music, however, with a differing concept of "complete satisfactory harmony". Because of a change in attitude towards resolution-style harmonies, a resolution chord in our era may be of such that during the 16th or 17th centuries the chord would be classified as dissonance. Naturally, our "modern resolution chord" depends much on what precedes it. The general principle applied to this is the feeling of instability transformed into stability, musch as it applied to the common practice period. Again,

the foundation remains the same, but with theory "advances" made concerning the factors of instability and stability, or tension and release. In the words of Norman Cazden: "Consonance and dissonance... are not generally valid perceptive qualities of music of a psycho-acoustic order. They are relational qualities pertaining to the criteria of one musical system among many."  

Krenék makes mention of the controversial factor involved in harmonic relationships, that the intervals chosen for musical purposes are purely arbitrary. This coincides with Cazden's discussion which mentions that "aesthetic expectations and perceptions of relatedness are provided by the culture in which that individual acquires the experience," and that changes in the systems of tonal relations are products of culture, changing as the culture changes. 

That the "modernists" have reason for a desired change regarding consonance and dissonance is obvious and even logical. Krenék stresses that "there is no law outside our free opinion by which any interval at all should be excluded as unsuitable for musical purposes." And for proof that "no law" exists outside of "our free opinion" one need only to associate himself with a sampling of some music of composers of the twelve-tone school.

CHAPTER VII
CONTEMPORARY CONTRAPUNTAL TECHNIQUES

Because this topic has possibilities of being dealt with at great length, and is in itself, an excellent subject for a thesis, a summarization only of some of the outstanding general features of contrapuntal techniques will be mentioned.

It is known that the modern era has brought back the use of some of the early methods of contrapuntal writing, and has proven them to be of great interest. Generally speaking, it is a use of these methods with added "modern spices" which has unveiled types of interesting music.

We may now call such writing "dissonant counterpoint" and consider this a "back-to-Bach" movement. It is the method of writing line-wise with the overall form orthodox. Horace Alden Miller, in his New Harmonic Devices, says about dissonant counterpoint: "An adaptation of the old tonal counterpoint to the altered demands of the new 'supertonal' harmony. Melodic lines combined in unorthodox counterpoint with atonal relations."^26

Advocates of the new era do not limit themselves in their use of intervals, in contradiction to the middle ages, yet they combine these intervals with modal techniques. We see, in modern music, examples of: (1) modal melodies with "newer" harmonic treatment, (2) examples with plainsong rhythm as background, (3) polymodal works and (4)

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examples of bi-tonal organum, to mention a few.

Mixed modes is a device in which there is a simultaneous sounding of one church mode but on different tonal degrees; e.g., a dorian line on $d$ against a dorian line on $g$ in another voice.

Following is an example of a dorian melody:

Ex. 28

An example of two lines of dorian mode built on different tonal degrees (having therefore different finals) is:
Hypo-dorian:

Ex. 30

Mariä Heimsuchung (Das Marienleben)

Dorian with both the natural and lowered sixth scale step:

Ex. 31

Verkündigung über den Hirten (Das Marienleben)
Following are some examples of contemporary organum and also of bi-tonal writing:

Contemporary Organum

Ex. 32. Kammermusik No. 2 (Klavier-Konzert)

[Musical notation image]
That counterpoint plays an important part in the modern idiom is seen in a quotation from Ernst Krenék, in the introduction to his book, *Studies in Counterpoint*, based on the twelve-tone technique:

The essentials of tonality—such as the key, the dominant-tonic function, the tonal cadence—are harmonic phenomena. In so far as atonality depends for its organization upon motif-relationships, it apparently brings melodic phenomena to the fore.

Atonality has brought forth the need to establish a new "balance," since in its attempt to dissolve tonal music, it has dissolved the
tonal "balance". Since then newer harmonic relations are unstable, or
loose-fitting, Krenek presupposes this to be a similar condition as
existed at the time of beginning polyphony.

Granting this supposition, it would then
appear sensible to look for the center of the
new "balance" exactly where the ancients looked
for it... namely, in the sphere of polyphony
and counterpoint.27

Harmonic counterpoint (and synonymous with this contemporary
organum) consists of the melodic aspects becoming composite, vertical
rows of harmony, involving shifts in feeling, rests and tension, etc.
as did the separate parts in polyphonic writing. And what lends itself
so well to the accepted ways of the modernists is the aspect of shifting
tonality involved, not to mention the unlimited possibilities that
contemporaries have in their treatment of such a style. As George
Dyson states:

The harmonic columns march boldly on their
way, and they ignore or defy traditional good
manners just as the early pioneers of counter-
point did... (and to get literary about it, he
continues)... Our young reformers bombard the
citadels of the classics with a shrapnel of
dismembered keys. The motto of both revolu-
tions ... "ca ira".28

Examples will make obvious such techniques and also show its
analogy to organum.

27. Ernst Krenek, Music Here and Now, p. 168.
28. George Dyson, The New Music, p. 84.
Following is a fine example of free, contemporary counterpoint:

Ex. 36

Kammermusik No. 2 (Klavier-Konzert)
CONCLUSION

It has been the purpose of this thesis to show, through observation of the works of Paul Hindemith as representative of the present era, that contrapuntal techniques of the past few hundred years continue to serve as a foundation for writing of the Twentieth Century.

An awareness of change in the "pattern" of music is unavoidable, yet one may lose sight of the fact that such an evolution takes place only in part, because of the presence of past established practices. To qualify the above use of "evolution", consideration has been made of diversifications in thinking and practice, past and present, concerning the aspects of consonance, dissonance and harmonic progression. Contemporaries, in their musical expression, have created a necessity for a new concept of these aspects in our present culture. Because of their innovations, a merely superficial acquaintance with twentieth-century music may be the reason why this music seems entirely new, a complete revolution. As has been explained in the thesis newer ideas and usage of harmonic progression may be often entirely thought of as secondary to the voice-leading of melodic lines, the lines assuming a primary role. Present, then, is the great importance of polyphony over harmony, similar to the early developments in melody-against-melody writing.

All of these changes have expanded the present knowledge of musical composition, and have opened new fields of musical thinking; they are continuing in search of new "condiments" to add to already established means. However, not all of the search is for the discovery of
something entirely new. This is true when considering the role that modal influences play in the "new" music. The fact should not be disregarded that composers have reverted to the rhythmic and melodic aspects of plainsong.

When one considers the important factor in music of "balance", which is an orderly relationship between vertical and horizontal aspects, the atonal school of musicians, especially Krenké confronts us with the view quoted in the previous section. (p. 43). It is not unusual that the twelve-tone composers should take such a point of view, considering that through their innovations they have disrupted the tonal-center system in music, and with this, the balance. A knowledge of polyphonic practices is a pre-requisite to both understanding and writing in such a style.

Even in the much more restrained style of Hindemith factors of melody, rhythm and harmony often cannot be analyzed according to conventional methods. It can be concluded that his contrapuntal treatment is an extremely important ingredient in binding together his work. Seen in Hindemith's music is an extensive use of canonic treatment, of imitation, sequence, invertible counterpoint, stretto, etc. These devices all serve the purpose of providing unity and a cohesiveness of musical fabric through linear means. And though the resultant sounds are new, the devices are unmistakably rooted in traditional writing.
APPENDIX

GENERAL ANALYSIS OF THE TWELVE FUGUES
IN HINDEMITH'S "LUDUS TONALIS"
A general comment to be made about the fugue subjects in the *Ludus Tonalis* is that throughout the twelve fugues they consist of a balance of intervals, of both harmonic and melodic force, according to Hindemith’s scale of the harmonic and melodic value of intervals: 29

The letters "h" and "m" will be applied throughout in the analysis of the fugue subjects to denote the nature and sequence of his use of these values.

Fuga prima in C

This first fugue seems to consist of three separate subjects in fugal style, the second and third subjects beginning in measures 11 and 21 respectively.

In measure 21 the second and third subjects overlap. Measures 30-
34 are episodic. At measure 35 all three subjects join in invertible
counterpoint for what might be termed a recapitulation.

Fuga secunda in G

Ex 39

Exposition

Meas. 1-18

Episode

Meas. 18-23

Middle Section

Meas. 24-28 - "loose" stretto used
29-35 - episodic; use of sequence and contrary motion
36-38 - "loose" stretto
39-53 - episodic (sequential treatment of previous episode,
      29-35)
54-64 - subject material (final section)
65-75 - codetta, involving some "contemporary" organum;
subject is repeated in the bass line fourfold,
appearing on different pulses, involving two ex-
amples of "per arsin et thesin"

Fuga tertia in F

Ex 40
Exposition

Meas. 1-18

Episode

Meas. 19-22

Middle Section

Meas. 23-30 - Subject inverted

31-end - first 30 measures in "cancrizans" writing. This
would seem to indicate that the middle section con-
tinues until the exposition appears in reverse and
becomes the Final section. This begins the last
beat of measure 41.

Fuga quarta in A

Ex. 41.

Exposition

Meas. 1-8 - "A"

9-14 - extensive use of inversion

Episode

Meas. 15-17 - transitional use of the second measure of subject
in sequence

Middle Section

Meas. 18-24 - stretto (loose) with several inversions

24-25 - simultaneous sounding of the subject in original
form and inverted

25-27 - Extension

28-41 - "B", or second subject (slow section) fugato

42-44 - codetta

45-48 - subjects "A" and "B" sounded together, with "B"
elongated and rhythmically modified.

49-52 - "B" subject in stretto

53-57 - episodic ("A" inverted)
58-67 - Simultaneous use of "A" and "B", in 60-63
"A" is inverted
68 - link
69-73 - use of "A" in contrary motion to itself
74-76 - codetta

**Fuga quinta in E**

Exposition
Meas. 1-23

Episode
Meas. 24-27

Middle Section
Meas. 28 - subject returns
34 - inverted subject
41-50 - episodic (41-44 is invertible counterpoint, at the octave at 45-48)

Final Section
Meas. 51 - subject inverted at measure 62 the second half of the subject transfers to another voice and is extended
74-end - extension of subject material

**Fuga sexta in E**

Ex. 43
Exposition

Meas. 1-12

Episode

Meas. 13-16

Middle Section

Meas. 17

21 - answered in inversion
24 - third entry, inverted
28-31 - subject inverted

Episode

Meas. 31-35

Final Section

Meas. 36 - subject, original form, but on B tonal center
39 - answered in F♯, but altered into a link style
43 - subject in original form, with extension to end.

Fuga septime in A♭

Exposition

Meas. 1-14

Episode

Meas. 14-22

Middle Section

Meas. 23-27 - subject
27-28 - link, using rhythm of subject
29-33 - subject
34-41 - episode
Final Section

Meas. 42-end - Final Section; subject 4th above the original statement in Exposition
50-54 - codetta, using rhythm of subject in three-part canonic treatment

This fugue is unusual because of the final tonality of C major.

Fuga Octava in D

This fugue of twenty-six measures seems to be conceived in two main divisions of eleven measures each with a three and one-half measure principal Episode.

Exposition a

Meas. 1-4
5-6 - link

Exposition b

Meas. 6½-11

Episode

Meas. 12-15½

Final Section a

Meas. 15½-18
19-20 - link (based on episode)

Final Section b or Coda

Meas. 21-26

Of interest is the unusual skip of a ninth in the subject. This is altered in only one instance (bar 17).
Exposition

Meas. 1-12

Episode

Meas. 12-16 – rhythmic figure from subject

Middle Section (A)

Meas. 16-29 – subject begins on second beat instead of first for two entrances, three entrances are inverted
(22-24) - link
(25-26) - stretto
29-30 - link
30-41 - subject reversed and rhythmically modified, for four of the five entrances
(33-35) and (38-39) - close stretto
42-46 - episodic

Middle Section (B)

Meas. 46-53 – four complete statements, two reversed and inverted, two merely reversed
(46-47) and (49-50) - stretto
54 - link
55-64 – five complete statements, two inverted, two in augmentation
(55-57) - stretto

Episode

Meas. 64-65

Final Section

Meas. 66-77
(72-73) - link

Codetta

Meas. 77-82
Fuga decima in $D^b$

Ex. 46

The entire second half, measures 18 to the end, consists of the first seventeen measures in inversion.

Exposition

Meas. 1-8

Episode

Meas. 8-10

Middle Section A

Meas. 11-14 - three entrances; stretto between upper two voices
14 - link
15-17 - "close" stretto
17-18 - link
18-34 - inversion of first seventeen measures

Middle Section B

Meas. 18-25 - measures 1-8 inverted

Episode

Meas. 25-27

Final Section

Meas. 27-31 - measures 11-14 inverted
31 - link
32-34 - measures 15-17 inverted
34-36 - codetta, with original statement
Fuga undecima in B (Canon)

This is a two-voiced canon at the interval of a perfect fifth, accom-
panied by a third part. It is in two divisions.

Exposition

Meas. 1-12
12½-22 - Subject returns, altered and one half-step lower, 
followed again by the second voice at the interval 
of a perfect fifth.
22-23 - codetta

Fuga duodecima in F♯

This fugue appears to be in two principal divisions of approximately 
equal lengths. The same four-measure codetta appears at the end of 
both sections, on different tonal levels. The two outer voices are 
treated canonically.

There is some feeling for a third or final section because announce-
ments are made on the tonal degrees of the exposition. However, this 
so-called "recapitulation" overlaps with the previous division. This 
appears to be a compression of the form.

Exposition

Meas. 1-14 - stretto is introduced in second measure and plays 
an important part throughout the fugue
(8-10) - link
15-18 - codetta

Middle Section

Meas. 19-33 - stretto is again used
(23-25) - link
26-29 - overlap of sections
29-33 - recapitulation
34-37 - codetta
BIBLIOGRAPHY


Grove's *Dictionary of Music and Musicians.*


____________. *Studies in Counterpoint.* New York: Schirmer, 1940.


____________. *Double Counterpoint and Canon.* London: Augener, Ltd., 1891.

____________. *Fugue.* London: Augener, Ltd., 1891.

