

# Thesaurus of Scales and Melodic Patterns

Nicolas Slonimsky

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# THESAURUS OF SCALES AND MELODIC PATTERNS

## INTRODUCTION

THE PRESENT THESAURUS is a reference book of scales and melodic patterns, analogous in function with phrase books and dictionaries of idiomatic expressions. But while phrase books are limited to locutions consecrated by usage, the THESAURUS includes a great number of melodically plausible patterns that are new. In fact, many compositions appearing in recent years contain thematic figures identical with those found in the THESAURUS.

From time to time musical theorists have suggested the possibility of forming entirely new scales based on the division of the octave into several equal parts. As early as 1911 the Italian musician Domenico Alaleona proposed such new scales. Alois Haba, in his *Neue Harmonielehre* (1927), classifies a great number of scales based on equal intervals and suggests harmonizations of these new scales. Joseph Schillinger in his posthumously published *Schillinger System of Musical Composition* classifies new tonal progressions in the chapter Theory of Pitch-Scales.

The scales and melodic patterns in the THESAURUS are systematized in a manner convenient to composers in search of new materials. The title THESAURUS OF SCALES AND MELODIC PATTERNS is chosen advisedly. The term scale, as here used, means a progression, either diatonic or chromatic, that proceeds uniformly in one direction, ascending or descending, until the terminal point is reached. A melodic pattern, on the other hand, may be formed by any group of notes that has melodic plausibility. There are scales of 4 notes only; and there are scales and patterns of 12 different notes. But counting repeated notes appearing in different octaves, a scale may have as many as 48 functionally different notes, as in the Disjunct Major Polytetrachord (No. 958). As to melodic patterns, there is virtually no limit to the number of such tones.

The THESAURUS is arranged in the form of piano scales and melodic studies. No fingering is given, for the pianist will readily find the type of digitation best suited to the hand. Other instrumentalists, too, will find most of the scales and melodic patterns in the THESAURUS adaptable to their instruments. The notation throughout is enharmonic, and accidentals are used according to convenience. Double sharps and double flats are avoided entirely. Precautionary natural signs are placed here and there when an unusual melodic interval occurs. All accidentals affect only the note immediately following.

The scales and patterns in the THESAURUS are arranged according to the principal interval of each particular section. In order to avoid association with a definite tonality, these basic intervals are here referred to by Latin and Greek names derived from old usage. In addition, new terms had to be coined for intervals not in the system of historic scales. In these new terms the prefix *sesqui* stands for the addition of one-half of a tone. Thus, Sesquitone is  $1\frac{1}{2}$  tones, or a minor third; Sesquiquadritone is  $4\frac{1}{2}$  tones, or a major sixth; and Sesquiquintitone is  $5\frac{1}{2}$  tones, or a major seventh.

The table of intervals from the semitone to the major seventh appears as follows:

<i>Semitone</i>	Minor Second	<i>Tritone</i>	Augmented Fourth
<i>Whole Tone</i>	Major Second	<i>Diapente</i>	Perfect Fifth
<i>Sesquitone</i>	Minor Third	<i>Quadratone</i>	Minor Sixth
<i>Ditone</i>	Major Third	<i>Sesquiquadratone</i>	Major Sixth
<i>Diatessaron</i>	Perfect Fourth	<i>Quinquette</i>	Minor Seventh
		<i>Sesquiquintetone</i>	Major Seventh

The interval of a major ninth is called Septitone, to indicate that it contains 7 whole tones.

These basic intervals are regarded as fractions of one or more octaves. Thus, the Tritone Progression represents the division of the octave into 2 equal parts, and it produces sequential scales and patterns. The Ditone Progression is the division of the octave into 3 equal parts, and is intervallically identical with the augmented triad. The Sesquitone Progression is the division of the octave into 4 equal parts, and is identical with the familiar diminished-seventh chord. The Whole-Tone scale represents the equal division of the octave into 6 parts. The Semitone Progression is equivalent to the chromatic scale. By the process of permutation the chromatic scale is productive of characteristic patterns of the 12-tone technique.

By dividing 2 octaves into 3 equal parts we obtain the Quadratone Progression, which is closely related to the Ditone Progression, being in fact a spread-out augmented triad. By dividing 3 octaves into 4 equal parts we obtain the interval of the major sixth. This is the Sesquiquadratone Progression, which is an unfolded Sesquitone Progression, productive of patterns related to diminished-seventh harmonies.

In the cycle of scales the interval of a perfect fifth is one-twelfth part of 7 octaves, and it is so represented in the Diapente Progression. A perfect fourth is one-twelfth part of 5 octaves, and is classified as such in the section Diatessaron Progression.

Pursuing a similar process, we find that the Sesquiquintetone Progression, or the progression of major sevenths, is the result of the equal division of 11 octaves into 12 parts. Finally, the Septitone Progression is the equal division of 7 octaves into 6 parts, with the basic interval of a major ninth.

Scales and melodic patterns are formed by the processes of Interpolation, Infrapolation, and Ultrapolation. The word Interpolation is in common usage; here it signifies the insertion of one or several notes between the principal tones. Infrapolation and Ultrapolation are coined words. Infrapolation indicates the addition of a note below a principal tone; Ultrapolation is the addition of a note above the next principal tone. Infrapolation and Ultrapolation result in the shift of direction, with the melodic line progressing in zigzags. Infrapolation, Interpolation and Ultrapolation may be freely combined, resulting in hyphenated forms: Infra-Interpolation, Infra-Ultrapolation, and Infra-Inter-Ultrapolation.

The musical notation consists of two staves. The top staff has four measures separated by vertical bar lines. The first measure is labeled "Principal Tones" and shows a single note. The second measure is labeled "Interpolation" and shows a note followed by a smaller note below it. The third measure is labeled "Ultrapolation" and shows a note followed by a smaller note above it. The fourth measure is labeled "Infrapolation" and shows a note followed by a smaller note below it. The bottom staff has three measures separated by vertical bar lines. The first measure is labeled "Infra-Interpolation" and shows a note followed by a smaller note below it. The second measure is labeled "Infra-Ultrapolation" and shows a note followed by a smaller note above it. The third measure is labeled "Infra-Inter-Ultrapolation" and shows a note followed by a smaller note below it, then another note above it.

Progressions and patterns based on unequal division of the octave are exemplified by Heptatonic scales and Pentatonic scales. Among Heptatonic scales, or 7-tone scales, are our familiar major and minor scales as well as the church modes. In the section Heptatonic Arpeggios the scales are spread out in thirds. In the section Bitonal Arpeggios the C major arpeggio is combined with arpeggios in all other 23 major and minor keys.

Busoni, who had earnestly explored new musical resources, found 113 different scales of 7 notes. Mentioning as an example the scale: C, Db, Eb, Fb, Gb, Ab, Bb, C (it is No. 1035 in the THESAURUS), he writes in his *Entwurf einer neuen Aesthetik der Tonkunst*: "There is a significant difference between the sound of this new scale when C is taken as the tonic and when it is taken as the leading tone of the scale of Db minor. By harmonizing the tonic with the customary C major triad as a fundamental chord, a novel harmonic sensation is obtained."

In his *Chronicle of My Musical Life* Rimsky-Korsakov mentions the use he made of an 8-tone scale, formed by alternating major and minor seconds. This is Scale No. 393 in the THESAURUS. Sporadic uses of the Whole-Tone scale are found in Glinka and even in Mozart (as a jest to mock the inept *Dorfmusikanten*), but it did not become a deliberate device before Debussy. In Debussy's piano piece *Voiles* the principal melodic structure is in the Whole-Tone scale, but the middle part is written exclusively on the black keys, exemplifying the Pentatonic scale.

The Whole-Tone scale has 6 notes to the octave; the Pentatonic scale has five. The Whole-Tone scale is possible in only one form on a given note, but there can be many Pentatonic scales. There are 49 Pentatonic scales in the THESAURUS.

The 12-Tone Technique of composition promulgated by Schoenberg is based on permutations of the Semitone scale. Various 12-tone patterns are found in the THESAURUS in examples No. 1214 to No. 1318. For example, it is possible to arrange the 12 chromatic tones in 2 major and 2 minor triads without repeating a note. It is also possible to form 4 mutually exclusive augmented triads using all 12 chromatic tones. The theme of Liszt's *Faust* Symphony is composed of 4 augmented triads. It is further possible to split the chromatic scale into a diminished triad, a minor triad, a major triad, and an augmented triad. These mutually exclusive triads can be arranged in the form of Quadrtonal Arpeggios.

A recent development of the 12-Tone Technique is the 11-interval technique, which prescribes the formation of progressions containing 11 different intervals. The idea was first introduced by the Austrian musician Fritz Klein in 1921 in a curious composition entitled *Die Maschine*, with the sub-title *Ex-Tonal Self-Satire*. The name of the composer was concealed behind a characteristic nom de plume *Heautontimorumenus* which means Self-Torturer. In this piece Klein introduced a Mother Chord which contains not only all 11 different intervals, but 12 different notes as well.

A further elaboration on the Mother Chord is an invertible 11-interval, 12-tone chord introduced by the author and appropriately christened Grandmother Chord. It has all the intervallic properties of the Mother Chord plus an especial order of intervals so arranged that they are alternately odd-numbered and even-numbered when counted in semitones, with the row of odd-numbered intervals forming a decreasing arithmetical progression and the row of even-numbered intervals forming an increasing arithmetical progression. The order of notes in the Grandmother Chord is identical with the 12-tone Spiral Pattern No. 1232a.

All chords composed of 11 different intervals add up to the interval of 66 semitones, which is the sum of the arithmetical progression from 1 to 11. The interval of 66 semitones equals  $5\frac{1}{2}$  octaves, and so forms a Tritone between the lowest and the highest tones in the Pyramid Chord, Mother Chord, Grandmother Chord, and other 11-interval structures.

Scales and patterns listed in the main body of the THESAURUS readily lend themselves to new melodic possibilities. For instance, a descending scale may be played in the form of the melodic inversion of the ascending scale, as suggested in the section Mirror Interval Progressions. It is possible to form complementary scales in the range of 2 octaves, by using in the second octave the notes not used in the first. Other possibilities for the formation of new patterns are demonstrated in the section on Permutations.

A Diatonic counterpart of the 12-Tone Technique is the system of Pandiatonic composition. The term Pandiatonic, first introduced by this writer in 1937, denotes the free use of all 7 tones of the diatonic scale, both melodically and harmonically. In one-part Pandiatonic Progressions, the melody is made up of 7 different notes of the diatonic scale. Such a progression may then be melodically inverted, read backward, or both, resulting in 4 different forms. Pandiatonic Counterpoint in strict style uses progressions of 7 different notes in each voice, with no vertical duplication.

Pandiatonic Harmony is the twentieth century counterpart of classical harmony. Modern composers of such varied backgrounds and musical persuasions as Ravel, Stravinsky, Hindemith, Milhaud, Copland and Roy Harris make use of this technique, arriving at it by different creative processes. Jazz composers, too, have found, by sheer experimentation, effective application for the enriched chords of Pandiatonic formations. It is a common practice to end an orchestral arrangement of a popular song by the enriched major triad with an added sixth, seventh, or ninth.

The concluding sections of the THESAURUS demonstrate the various methods by which tonal materials may be used to best advantage. The section Double Notes shows the combinations derived from corresponding scales and patterns. Plural Scales and Arpeggios give examples of common major and minor progressions arranged consecutively in chromatic transposition. Polytonal Scales are simultaneous progressions in different keys. Polyrhythmic Scales are progressions in different rhythms. Polytonal Polyrhythmic Scales combine different rhythms in different tonalities.

A special word is to be said about Palindromic Canons. Palindromes are words or sentences that read the same forward or backward, as the sentence *Able Was I Ere I Saw Elba* (applied to Napoleon). Similarly, Palindromic Canons read the same backward or forward. The two Palindromic Canons based on Pattern No. 72 are particularly interesting. They result in a progression of enharmonic triads or their inversions, alternating in major and minor keys.

Fragments of the scales and patterns in the THESAURUS may be used as motives and themes. The rhythmical elaboration is left to the imagination of the composer. By using a portion of a pattern in forward and retrograde motion, in varied rhythms within a given meter, it is possible to form an unlimited number of melodic figures.

Pattern №194

Rhythmic Development



Two formulas are used in the harmonization of the scales and patterns: one by common triads, and one by seventh-chords. In the harmonization by common triads, only root positions of major triads in close harmony are applied. Either the root, the third, or the fifth may appear in the melody. These positions are referred to as Octave, Tertian, and Quintan, or in figures, 8, 3, and 5. When the melody ascends, diatonically or chromatically, the positions change from the Octave to the Tertian to the Quintan to the Octave. When the melody descends, the order of the positions is reversed. Furthermore, the order of positions may be reversed at the end of a cadence even in ascending motion. When the melody is stationary, the order of positions is free. The resulting harmony traverses several tonalities in an alternation of successive major chords.

**Harmonization in Major Triads**  
(Figures Indicate Intervals Between the Melody and the Bass)

The harmonization in major triads is found in the music of Debussy, Moussorgsky, and other composers of the French and Russian schools. A classical example is the scene in the monk's cell in Moussorgsky's opera *Boris Godunov*. In the second act of Puccini's opera *Tosca* the Whole-Tone scale in the bass is harmonized by a row of major triads with the positions following the Octave-Tertian-Quintan (8-3-5) formula.

Moussorgsky: *Boris Godunov*      Puccini: *Tosca* (Whole-Tone Scale in the Bass)

The second type of harmonization is effected by means of Master Chords. These Master Chords are dominant-seventh chords with the fifth omitted. In combination with melodic elements of a given scale or pattern, these chords form harmonic structures of the type of seventh-chords, ninth-chords, or whole-tone chords. The Master Chords are indicated for ascending scales and patterns in the sections Tritone Progression, Ditone Progression and Sesquitone Progression by figures within circles, as ⑤, and are used to harmonize an entire rhythmic group in a given progression. In the Tritone and Sesquitone Progressions it is also possible to harmonize the entire octave range with a single Master Chord. Furthermore, any Master Chord suitable for harmonization of a given progression may be transposed a tritone up or down with satisfactory results.

**Harmonization with Master Chords**

Harmonization of both types is given in the tables on pp.240-241. To harmonize in major triads, it is necessary to alternate the Octave, Tertian, and Quintan positions given in the table. In harmonizing by seventh-chords, ninth-chords, and whole-tone chords, any chord under a given melody note will furnish a workable harmony.

The patterns in the Diatessaron and Diapente Progressions lend themselves to harmonization characteristic of the Dominant-Tonic cycle. When harmonized in consecutive seventh-chords, such patterns acquire a Schumannesque quality.

#### Harmonization in Seventh-Chords

**Pattern №856**

A harmonization of the Dominant-Tonic type will impart a feeling of tonality even to a 12-tone progression.

#### Tonal Harmonization of a 12-Tone Pattern

**Pattern №646**

Traditional harmonization in major and minor keys uses chords formed by the diatonic scale. Similarly, new scales may be harmonized with the aid of chords formed by the notes of the scale itself. Examples of such Autochordal Harmonization are given in a special table. There are scales that admit of only 2 different triads, as Scale No. 7, which can be harmonized with C major and F $\sharp$  major triads. The 8-tone scale No. 393 is capable of forming 8 different triads, while other scales, such as No. 5, do not yield a single triad.

All scales and patterns in the THESAURUS are centered on C as the initial and concluding tone. It goes without saying that these progressions can be transposed to any tonal center according to a composer's requirements.

John Stuart Mill once wrote: "I was seriously tormented by the thought of the exhaustibility of musical combinations. The octave consists only of five tones and two semitones, which can be put together in only a limited number of ways of which but a small proportion are beautiful: most of these, it seemed to me, must have been already discovered, and there could not be room for a long succession of Mozarts and Webers to strike out, as these have done, entirely new surpassing rich veins of musical beauty. This sort of anxiety, may, perhaps, be thought to resemble that of the philosophers of Laputa, who feared lest the sun be burnt out."

The fears of John Stuart Mill are unjustified. There are 479,001,600 possible combinations of the 12 tones of the chromatic scale. With rhythmic variety added to the unbounded universe of melodic patterns, there is no likelihood that new music will die of internal starvation in the next 1000 years.

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1 January 1947 Boston, Massachusetts

# EXPLANATION OF TERMS

**AUTOCHORDAL HARMONIZATION.** Application of chords derived from the tones of a given scale (Example, Scale No. 12: C, D $\sharp$ , F, F $\sharp$ , A, B, C, harmonized in 2 triads, F major and B major).

**BITONAL ARPEGGIOS.** [Nos. 1191-1213]. Melodic progressions formed of alternating arpeggios in 2 different keys.

**BITONAL PALINDROMIC CANONS.** Canons that result in the formation of 6-tone chords composed of 2 triads (Example, Scale No. 7: C, C $\sharp$ , E, F $\sharp$ , G, A $\sharp$ , C, developed canonically, forming bitonal chords of C major and F $\sharp$  major).

**CHORD OF THE MINOR 23RD.** Chord consisting of 12 different notes, arranged in thirds, and forming 4 mutually exclusive triads.

**COMPLEMENTARY SCALES.** Melodic progressions of two octaves in range, comprising all 12 tones of the chromatic scale (Example, C major scale plus the pentatonic scale on black keys).

**CONJUNCT POLYTETRACHORD.** Progression of 12 tetrachords traversing all 12 keys, with the terminal tone of one tetrachord being the initial tone of the next (Examples, Phrygian Polytetrachord, No. 830; Minor Polytetrachord, No. 832; Major Polytetrachord, No. 833).

**CROSSING INTERVALS.** [Nos. 1243-1250]. Two overlapping 6-tone rows comprising all 12 different tones, each row forming a progression of major or minor seconds, thirds, fourths, fifths and sixths.

**DIAPENTE.** Interval of 3½ tones; a perfect fifth.

**DIATESSARON.** Interval of 2½ tones; a perfect fourth.

**DISJUNCT POLYTETRACHORD.** Progression of 12 tetrachords traversing all 12 keys, with adjacent tetrachords separated by one diatonic degree (Examples, Disjunct Phrygian Polytetrachord, No. 951; Disjunct Minor Polytetrachord, No. 956; Disjunct Major Polytetrachord, No. 958; Disjunct Lydian Polytetrachord, No. 959).

**DITONE.** Interval of 2 whole tones; a major third.

**GRANDMOTHER CHORD.** Chord, invented by Nicolas Slonimsky on February 13, 1938, containing all 12 different tones and different intervals symmetrically invertible in relation to the central interval, the tritone, which is the inversion of itself; the intervallic structure being a row of alter-

natingly odd and even intervals (counted in semitones), the odd-numbered series forming a diminishing arithmetical progression, and the even-numbered series an increasing progression.

**HEPTATONIC ARPEGGIOS.** [Nos. 1088-1141]. Melodic progressions by thirds derived from Heptatonic scales.

**HEPTATONIC SCALES.** [Nos. 1034-1087]. Diatonic progressions of 7 degrees, such as major and minor scales and church modes, and also scales containing 1 or 2 augmented seconds.

**INFRA-INTER-ULTRAPOLATION.** Pattern formed by the insertion of notes below, between, and above the principal tones of a progression (Example, Pattern No. 341).

**INFRAPOLATION.** Insertion of a note below the principal tones of a progression (Example, Pattern 231).

**INTERPOLATION.** Insertion of one or more notes between the principal tones of a progression (Example, Scale No. 21).

**INTER-ULTRAPOLATION.** Insertion of 2 notes, one between the principal tones of a given progression, the other above the principal tone (Example, Pattern No. 123).

**MAJOR BITONAL CHORD.** Chord of 2 major triads usually in keys whose tonics are at the interval of a tritone, as C major and F $\sharp$  major.

**MAJOR POLYTETRACHORD.** A series of major tetrachords, conjunct or disjunct, covering all 12 major keys (Examples, No. 833 and No. 958).

**MASTER CHORDS.** Dominant-seventh chords with the fifth omitted, tabulated chromatically in 12 different keys, to be used in harmonizing scales and melodic patterns, and indicated by figures, enclosed in circles, from 1 to 12.

**MINOR BITONAL CHORD.** Chord consisting of 2 minor chords, usually with tonics at the interval of a tritone, as C minor and F $\sharp$  minor.

**MINOR POLYTETRACHORD.** A series of minor tetrachords, conjunct or disjunct, covering all 12 minor keys (Examples, No. 832 and No. 956).

**MIRROR INTERVAL PROGRESSIONS.** Scales and patterns in which the descending figure is the melodic inversion of the ascending figure (Example, Scale No. 1 ascending is the mirror inversion of Scale No. 4 descending).

**MOTHER CHORD.** Chord, introduced by Fritz Klein in 1921, containing all 12 tones and 11 different intervals.

**MUTUALLY EXCLUSIVE TRIADS.** Four triads (major, minor, diminished or augmented) comprising all 12 different tones (Example, C major, F♯ major, D minor, and G♯ minor).

**NON-SYMMETRIC INTERPOLATION.** Free insertion of additional notes between the principal tones.

**OCTAVE POSITION.** In four-part harmony, a triad with the root both in the melody and in the bass.

**PALINDROMIC CANONS.** Canons that read the same backward or forward.

**PANDIATONIC HARMONY.** Part-writing in chords freely combined from the 7 tones of the diatonic scale.

**PANDIATONIC PROGRESSIONS.** Tonal rows composed of all 7 different tones of the diatonic scale.

**PATTERN.** Melodic figure in which the direction changes from ascending to descending, or vice versa, before arriving at the terminal point (All extrapolated and ultrapulated progressions are patterns).

**PENTATONIC SCALES.** [Nos. 1142-1190]. Scales of 5 notes.

**PERMUTATION.** Distribution of notes of a given melodic pattern in different orders of succession.

**PHRYGIAN POLYTETRACHORD.** Polytetrachord composed of 12 conjunct or disjunct Phrygian tetrachords (1 semitone plus 2 whole tones), (Examples, No. 830 and No. 951).

**PLURAL SCALES.** Progressions formed by disjunct scales, as C major, D♭ major, D major, and E♭ major.

**POLYRHYTHMIC SCALES.** Simultaneous progressions in different rhythms.

**POLYTETRACHORD.** Progression of 12 tetrachords passing through all 12 keys conjunctly (with the last tone of one tetrachord coinciding with the first tone of the next), or disjunctly (with the terminal tone of the first tetrachord separated by a diatonic degree from the initial tone of the next).

**POLYTONAL POLYRHYTHMIC SCALES.** Simultaneous progressions in different keys and in different rhythms.

**POLYTONAL SCALES.** Scales in different tonalities played simultaneously.

**PROGRESSION.** General term for any scale or melodic pattern.

**PROMETHEUS SCALE.** [No. 50]. The 6-tone scale (C, D, E, F♯, A, B♭) used by Scriabin in his symphonic poem *Prometheus*.

**PYRAMID CHORD.** Chord, introduced by Fritz Klein in 1921, composed of a series of diminishing intervals from an octave to a semitone.

**QUADRITONE.** Interval of 4 whole tones; a minor sixth.

**QUADRITAL ARPEGGIOS.** [Nos. 1251-1291]. Melodic progressions formed by 4 mutually exclusive triads, as C major, D minor, F♯ major, and G♯ minor.

**QUARTAL CHORD.** 12-tone chord arranged in perfect fourths.

**QUINQUETONE.** Interval of 5 whole tones; a minor seventh.

**QUINTAN POSITION.** In four-part harmony, a triad with the root in the bass and the fifth in the melody.

**SCALE.** Progression of tones changing its direction only at terminal points (All interpolated progressions are scales).

**SEMITONE PROGRESSION.** Scale consisting of consecutive semitones; a chromatic scale.

**SEPTITONE.** Interval of 7 whole tones; a major ninth.

**SESQUI.** Prefix signifying the addition of a semitone to a given interval (Sesquitone = 1½ tones; Sesquiquadritone = 4½ tones).

**SESQUIQUADRITONE.** Interval of 4½ tones; a major sixth.

**SESQUIQUINQUETONE.** Interval of 5½ tones; a major seventh.

**SESQUITONE.** Interval of 1½ tones; a minor third.

**SPIRAL PATTERNS.** Melodic progressions converging toward a central tone.

**SYMMETRIC INTERPOLATION.** Insertion of notes at equal intervals from respective pivotal points, resulting in invertible progressions (Example, Scale No. 37: C, D, F, F♯, G, B♭, C, in which the intervals are the same from C upward and from the upper C downward).

**TERTIAN POSITION.** In four-part harmony, a triad with the root in the bass and the third in the melody.

**TONE-CLUSTER.** Term, introduced by Henry Cowell, signifying a complex of notes filling one or more octaves, diatonically, chromatically, or pentatonically.

**TRITONE.** Interval of 3 whole tones; an augmented fourth, or a diminished fifth.

**TWELVE-TONE PROGRESSIONS.** Melodic figures of 12 different tones.

**ULTRAPOLATION.** Insertion of one or more notes above a principal tone of a scale (Example, Pattern No. 53, in which G is inserted above F♯).

**WHOLE-TONE CHORDS.** Chords composed of intervals of one or several whole tones each.

# Tritone Progression

Equal Division of One Octave into Two Parts



Interpolation of One Note

1

2

3

4

①②③④⑤⑥⑦⑧⑨⑩⑪⑫ indicate Master Chords.

2

## Interpolation of Two Notes

5

1 5 7 9 11

6

6

3 6 8 10 12

7

7

1 4 7



8

Musical score page 3, measures 8-9. The score continues with two staves. Measure 8 starts with a treble clef and measure 9 starts with a bass clef. Measure 8 includes circled markings "(6) (12)". The music consists of eighth-note patterns and rests. Measure 9 begins with a bass clef and continues the melodic line.

Musical score page 3, measures 9-10. The score continues with two staves. Measure 9 starts with a treble clef and measure 10 starts with a bass clef. The music consists of eighth-note patterns and rests, continuing the melodic line from the previous measures.

9

Musical score page 3, measures 10-11. The score continues with two staves. Measure 10 starts with a treble clef and measure 11 starts with a bass clef. Measure 10 includes circled markings "(3) (9)". The music consists of eighth-note patterns and rests, continuing the melodic line.

Musical score page 3, measures 11-12. The score continues with two staves. Measure 11 starts with a treble clef and measure 12 starts with a bass clef. The music consists of eighth-note patterns and rests, concluding the piece.

4

10

(5)

11

(3)

12

(3) (6)



13

Continuation of measure 13, showing a treble staff with a circled 5 and circled 11, and a bass staff.

Continuation of the musical score, showing a treble staff and a bass staff.

### Interpolation of Three Notes

14

Musical score showing measure 14. The treble staff has circled 3, 6, 9, and 12 above it. The bass staff continues the melodic line.

Continuation of measure 14, showing a treble staff and a bass staff.

6

15

Musical score page 6, measures 15-16. The score consists of two staves: treble and bass. The treble staff has a key signature of one sharp (F#). The bass staff has a key signature of one sharp (F#). Measure 15 starts with a sixteenth-note pattern in the bass, followed by a treble line with eighth-note pairs. Measure 16 begins with a treble line featuring eighth-note pairs, followed by a bass line with eighth-note pairs.

(1) (7)

16

16

Musical score page 6, measures 16-17. The score consists of two staves: treble and bass. The treble staff has a key signature of one sharp (F#). The bass staff has a key signature of one sharp (F#). Measure 16 continues with eighth-note pairs in both treble and bass. Measure 17 begins with a treble line featuring eighth-note pairs, followed by a bass line with eighth-note pairs.

(5) (11)

17

17

Musical score page 6, measures 17-18. The score consists of two staves: treble and bass. The treble staff has a key signature of one sharp (F#). The bass staff has a key signature of one sharp (F#). Measure 17 continues with eighth-note pairs in both treble and bass. Measure 18 begins with a treble line featuring eighth-note pairs, followed by a bass line with eighth-note pairs.

(6) (12)

Musical score page 7, measures 17-18. The score consists of two staves: treble and bass. The key signature changes from A major (no sharps or flats) to E major (one sharp). Measure 17 starts with a treble note followed by a bass note. The treble staff has sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 18 begins with a bass note followed by a treble note. The treble staff continues with sixteenth-note patterns, and the bass staff has eighth-note patterns.

Musical score page 7, measures 18-19. Measure 18 starts with a treble note followed by a bass note. The treble staff has sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 19 begins with a bass note followed by a treble note. The treble staff continues with sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 19 is marked with circled numbers (3) and (9).

Musical score page 7, measures 19-20. Measure 19 starts with a treble note followed by a bass note. The treble staff has sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 20 begins with a bass note followed by a treble note. The treble staff continues with sixteenth-note patterns, and the bass staff has eighth-note patterns.

Musical score page 7, measures 20-21. Measure 20 starts with a treble note followed by a bass note. The treble staff has sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 21 begins with a bass note followed by a treble note. The treble staff continues with sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 21 is marked with circled numbers (3) and (9).

Musical score page 7, measures 21-22. Measure 21 starts with a treble note followed by a bass note. The treble staff has sixteenth-note patterns, and the bass staff has eighth-note patterns. Measure 22 begins with a bass note followed by a treble note. The treble staff continues with sixteenth-note patterns, and the bass staff has eighth-note patterns.

8

20

(3)

Musical score page 8, measures 20-21. The score consists of two staves: treble and bass. Measure 20 starts with a treble clef, followed by a bass clef. The music features sixteenth-note patterns with various accidentals. Measure 21 begins with a treble clef and continues the sixteenth-note patterns.

21

(5)

Musical score page 8, measures 22-23. The score consists of two staves: treble and bass. The treble staff has a treble clef and the bass staff has a bass clef. The music continues with sixteenth-note patterns and accidentals.

### Interpolation of Four Notes

22

(1)

Musical score page 9, measures 22-23. The score consists of two staves: treble and bass. The treble staff has a treble clef and the bass staff has a bass clef. The music features sixteenth-note patterns with accidentals, including a prominent 'b' (flat) sign in the bass staff.

Musical score page 9, measures 1-2. The top staff is in treble clef, and the bottom staff is in bass clef. Both staves feature complex note heads and stems, likely representing a transcription of a non-Western musical source.

Musical score page 9, measures 3-4. The top staff is in treble clef, and the bottom staff is in bass clef. Both staves show a continuation of the complex note heads and stems from the previous measures.

23

Musical score page 9, measures 5-6. The top staff is in treble clef, and the bottom staff is in bass clef. The bottom staff is labeled with a circled 6. Both staves show a continuation of the complex note heads and stems.

Musical score page 9, measures 7-8. The top staff is in treble clef, and the bottom staff is in bass clef. Both staves show a continuation of the complex note heads and stems.

Musical score page 9, measures 9-10. The top staff is in treble clef, and the bottom staff is in bass clef. Both staves show a continuation of the complex note heads and stems.

10

24

Musical score for measures 24-26. The score consists of four staves. The top two staves are treble clef, and the bottom two are bass clef. Measure 24 starts with a sixteenth-note pattern in the bass staff, followed by eighth-note patterns in both treble and bass staves. Measure 25 begins with a sustained note in the bass staff, followed by eighth-note patterns in both treble and bass staves. Measure 26 continues with eighth-note patterns in both treble and bass staves.

Musical score for measures 27-28. The score consists of four staves. The top two staves are treble clef, and the bottom two are bass clef. Measures 27 and 28 feature sustained notes in the bass staff, with the treble staff providing harmonic support through sustained notes and short melodic fragments.

25

Musical score for measures 29-30. The score consists of four staves. The top two staves are treble clef, and the bottom two are bass clef. Measure 29 starts with a sixteenth-note pattern in the bass staff, followed by eighth-note patterns in both treble and bass staves. Measure 30 continues with eighth-note patterns in both treble and bass staves.

Musical score for measures 31-32. The score consists of four staves. The top two staves are treble clef, and the bottom two are bass clef. Measures 31 and 32 feature sustained notes in the bass staff, with the treble staff providing harmonic support through sustained notes and short melodic fragments.



26

(3)

Musical score page 11, measure 26, part 3. The score consists of two staves. The top staff shows a melodic line with eighth-note patterns. The bottom staff shows a harmonic line with eighth-note patterns. The key signature changes frequently, starting with one flat, then one sharp, then one flat, then one sharp, then one flat, then one sharp, and finally one sharp again. Measure 26 concludes with a repeat sign and the beginning of measure 27.

Musical score page 11, measure 27. The score consists of two staves. The top staff shows a melodic line with eighth-note patterns. The bottom staff shows a harmonic line with eighth-note patterns. The key signature changes frequently, starting with one sharp, then one flat, then one sharp, then one flat, then one sharp, then one flat, then one sharp, and finally one sharp again.

Musical score page 11, measure 28. The score consists of two staves. The top staff shows a melodic line with eighth-note patterns. The bottom staff shows a harmonic line with eighth-note patterns. The key signature changes frequently, starting with one flat, then one sharp, then one flat, then one sharp, then one flat, then one sharp, and finally one sharp again.

12  
27

## Symmetric Interpolation of One Note

(6) (12)

28 (1) (3) (5) (9) (11)

29 (3) (6) (9) (12)

30 (1) (3) (5) (7) (9) (11)

31 (6) (12)

## Symmetric Interpolation of Two Notes

32 (11)

33 (6)

34 (11)

35 (3) (9)

36 Whole-Tone Scale (1) (3) (5) (7) (9) (11)

37 (11)

38 (3) (9)

39 (6) (12)

40 (5)

### Symmetric Interpolation of Three Notes

41

42

43

44

45

46

14



48



### Non-Symmetric Interpolation

49



50 [Scriabin: Prometheus Scale]



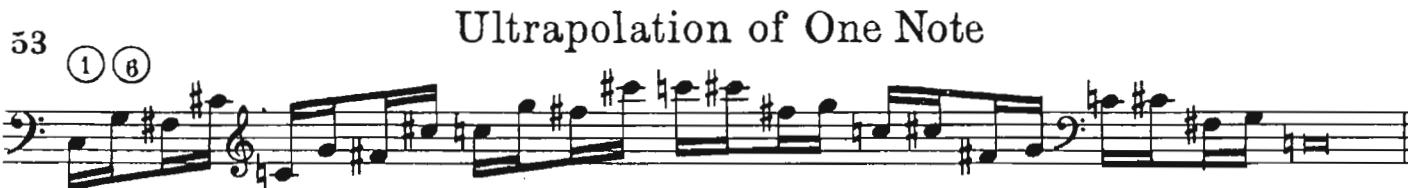
51



52



53



54



55



56



57 (5) (6) (11) (12)



58 (1) (12)



## Ultrapolation of Two Notes

59 (1)



60 (6) (12)



61 (1)



62 (6) (12)



63 (3)



64 (3) (5) (7) (9) (11)



65 (5) (11)



66 (3) (9)



16

67 (6)

68 (5)

69 (1)

70 (6)

71 (1) (7)

### Ultrapolation of Three Notes

72 (1) (7)

73 (12)

74 (5)

75 (5) (11)

76 (1) (7)

77 (6) (12)

78 (1) (7)

79 (1)

80 (5) (11) Infrapolation of One Note

81 (1) (3) (5) (7) (9) (11)

82 (3) (6) (9)

83 (3) (5) (9)

84 (1) (6) (12)

85 (5) (6) (10) Infrapolation of Two Notes

86 (6) (12)

87 (5) (11)

88 (6)

89 (3) (9)

90 (1) (3) (5) (7) (9) (11)

91 (1) (7)

92 (3) (9)

93 (6) (12)

### Infrapolation of Three Notes

94 (6) (12)

95 (1) (7)

96 (3) (9)

19

Infra-Interpolation

107 (6) (12) 8

Infra-Ultrapolation

108 (6) (12) 8

109 (5) (11) 8

110 (6) (12) 8

111 (5) (11) 8

112 (1) (7) 8

113 (1) (3) (5) (7) (9) (11) 8

114 (3) (9) 8

115 (6) (12) 8

116 (3) (9) 8

117 (1) 8

118 (1) (6) (7) (12) Inter-Ultrapolation

119 (1) (7)

120 (6) (12)

121 (1) (7)

122 (6) (12)

123 (1)

124 (3) (9)

125 (1) (3) (5) (7) (9) (11)

126 (5) (11)

127 (6) (12)

128 (3) (9)

129 (3) (9)

130 (6) (12)

131 (1) (7)

132 (1) (3) (5) (7) (9) (11)

133 (3) (9)

134 (1) (3) (5) (7) (9) (11)

135 (5) (11)

136 (6) (12)

137 (5) (11)

The sheet music consists of 12 staves of piano music. Each staff begins with a treble clef and a key signature of one sharp. Measure numbers 127 through 137 are printed at the start of each staff. Measure 127 begins with circled numbers (6) (12). Measure 132 begins with circled numbers (1) (3) (5) (7) (9) (11). Measures 134 and 137 begin with circled numbers (5) (11). Measures 128, 129, 131, 133, and 135 begin with circled numbers (3) (9). Measures 130 and 136 begin with circled numbers (6) (12). Measures 127, 130, 132, 134, and 137 end with a double bar line. Measure 131 ends with a single bar line. Measures 128, 129, 131, 133, 135, and 137 have a circled '8' above them, indicating a repeat sign.

138 (6) (12)

139 (5) (11)

140 (5) (6) (11) (12)

### Infra-Inter-Ultrapolation

141 (2) (8)

142 (5) (11)

143 (2) (8)

144 (5) (11)

145 (6) (12)

146 (2) (8)

147 (6) (12)

148 (10)

149 (10)

150 (5) (11)

151 (4) (10)

152 (5) (11)

153 (6) (12)

154 (5) (11)

155 (6) (12)

156 (5) (11)

157 (1) (7)

158 (1) (7)

52

159 (4) (10)

160 (1) (7)

161 (1) (3) (5) (7) (9) (11)

162 (3) (9)

163 (4) (10)

164 (3) (9)

165 (3) (9)

166 (1) (7)

167 (1) (3) (5) (7) (9) (11)

168 (3) (9)

169 (5) (11)

170 (5) (11)

171 (10)

172 (6) (12)

173 (6) (12)

174 (12)

175 (3) (9)

176 (6) (12)

177 (3) (9)

178 (7)

179 (3) (9)

180 (3) (9)

This block contains 11 staves of musical notation for a piano. Each staff has a treble clef and a 4/4 time signature. The music is divided into measures by vertical bar lines. Measure numbers 170 through 180 are placed at the start of each measure. Measure 170 begins with a key signature of one sharp. Measures 171 through 174 follow, with measure 174 ending with a double bar line. Measures 175 through 180 continue, ending with a final double bar line. The notation includes various note heads (solid, hollow, with stems up or down) and rests.

# Ditone Progression

Equal Division of One Octave into Three Parts



Interpolation of One Note

181

182

Interpolation of Two Notes

183



184 [Scale of A. Tcherepnin]

(6) (12)



185

(3) (9)



### Ultrapolation of One Note

186 (5) (6) (11) (12)



187 (1) (3) (5) (7) (9) (11)



188 (1) (6) (7) (12)



189 (1) (3) (5) (7) (9) (11)



190 (3) (6) (9)



191 (1) (3) (5) (7) (9) (11)



192 (5) (6) (11) (12)



193 (5) (6) (11) (12)

### Ultrapolation of Two Notes



194 (6) (12)

195 (5) (11)

196 (6) (12)

197 (5) (11)

198 (5) (11)

199 (1) (6) (7) (12)

200 (1) (3) (5) (7) (9) (11)

201 (3) (6) (9)

202 (1) (3) (5) (7) (9) (11)

203 (5) (6) (11) (12)

204 (1) (7)

205 (6) (12)

206 (1) (7)

207 (6) (12)

208 (3) (9)

209 (1) (3) (5) (7) (9) (11)

210 (5) (11)

211 (3) (9)

212 (6) (12)

213 (5) (11)

32

## Ultrapolation of Three Notes

214 (5)



215

(6) (12)



216 (5)



217

(6) (12)



218 (1) (7)



219

(6) (12)



220 (5) (11)



221

(6) (12)



223

(1) (7)



225

(1) (3) (5) (7) (9) (11)



227

(3) (9)



34

228 (6) (12)

229 (5) (11)

230 (5) (11)

8

231 [Schoenberg: *Ode to Napoleon*] Infrapolation of One Note

231 (5) (6) (11) (12)

232 (1) (3) (5) (7) (9) (11)

233 (3) (6) (9) (12)

234 (1) (6) (7) (12)

235 (1) (3) (5) (7) (9) (11)

236 (5) (6) (11) (12)

## Infrapolation of Two Notes

35

237 (5) (11)

238 (6) (12)

239 (5) (11)

240 (6) (12)

241 (5) (6) (11) (12)

242 (5) (6) (11) (12)

243 (3) (9)

244 (1) (3) (5) (7) (9) (11)

245 (1) (7)

246 (1) (3) (5) (7) (9) (11)

36

247 (5) (11)

248 (3) (9)

249 (6) (12)

250 (3) (6) (9) (12)

251 (6) (12)

252 (3) (9)

253 (9)

254 (1) (7)

255 (6) (12)

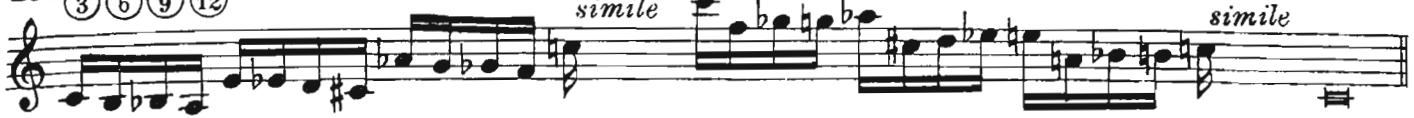
256 (1) (7)

257 (1) (6) (7) (12)

# Infrapolation of Three Notes

[12 Tones]

258 (3) (6) (9) (12)



259 (5) (11)



260 (1) (7)



261 (5) (11)



262 (5) (11)



263 (3) (9)



264 (6) (12)



265 (2) (8)



266 (5) (11)



267 (6) (12)



38

268 (6) (12)

*simile**simile*

269 (3) (9)

*simile**simile*

270 (1) (7)

*simile**simile*

271 (3) (9)

*simile**simile*

272 (6) (12)

*simile**simile*

273 (1) (7)

*simile**simile*

274 (1) (3) (5) (7) (9) (11)

*simile**simile*

275 (5) (11)

*simile**simile*

276 (1) (7)

*simile**simile*

277 (4) (10)

*simile**simile*

278 (5) (11)

279 (6)

280 (3) (6) (9) (12)

281 (5)

### Infra-Interpolation

282 (6) (12)

283 (5) (11)

284 (6) (12)

285 (1) (7)

0

286 (3) (9)

287 (6) (12)

288 (3) (9)

289 (3) (6) (9) (12)

290 (1) (7)

291 (1) (3) (5) (7) (9) (11)

292 (3) (9)

293 (1) (6) (12)

294 (1) (7)

# Infra-Ultrapolation

295 (5) (6) (11) (12)



296 (5) (6) (11) (12)



297 (6) (12)



298 (5) (11)



299 (6) (12)



300 (5) (11)



301 (5) (11)



302 (1) (3) (5) (7) (9) (11)



303 (1) (7)



42

304 (1) (3) (5) (7) (9) (11)

305 (3) (9)

306 (6) (12)

307 (3) (6) (9) (12)

308 (6) (12)

309 (3) (9)

310 (5) (11)

311 (5) (11)

312 (1) (7)

313 (6) (12)

314 (1) (6) (7) (12)

315 (5) (6) (11) (12)

### Inter-Ultrapolation

316 (6) (12)

317 (6) (12)

318 (1) (6) (7) (12)

319 (1)

320 (6) (12)

321 (1) (7)

322 (6) (12)

323 (5) (11)



324 (1) (3) (5) (7) (9) (11)



325 (1) (7)



326 (1) (3) (5) (7) (9) (11)



327 (3) (9)



328 (1) (3) (5) (7) (9) (11)



329 (5) (11)



330 (6) (12)



331 (3) (6) (9) (12)



332 (6) (12)



333 (3) (9)

334 (3) (6) (9) (12)

335 (3) (9)

336 (6) (12)

### Infra-Inter-Ultrapolation

337 (5) (11)

338 (2) (8)

339 (5) (11)

340 (2) (8)

341 (5) (11)

342 (6) (11) simile simile

343 (2) (8) simile simile

344 (6) (12) simile simile

345 (4) (10) simile simile

346 (10) simile simile

347 (1) (7) simile simile

348 (1) (7) simile simile

349 (1) (7) simile simile

350 (4) (10) simile simile

351 (5) (11) simile simile

352 (1 3 5 7 9 11) simile simile

353 (1 7) simile simile

354 (1 3 5 7 9 11) simile simile

355 (3 9) simile simile

356 (3 9) simile simile

357 (4 10) simile simile

358 (3 9) simile simile

359 12 Tones (3 9) simile simile

360 (6 12) simile simile

361 (6 12) simile simile

362 (6) (12) simile simile

363 (6) simile simile

364 (8) simile simile

365 (1) simile simile

366 (1) (7) simile simile

367 (1) (3) (5) (7) (9) (11) simile simile

368 (1) (7) simile simile

369 (6) (12) simile simile

370 [12 Tones] (1) (6) (7) (12) simile simile

371 [12 Tones] (5) simile simile

## Miscellaneous Patterns

49

372 [Dominant Seventh Chords]

(3)

373 (6)

374 (9)

375 (1)

376 [Six-five chords]

(1)

377 (3)

378 (6)

379 (9)

380 [Six-four-three chords]

(9)

381 (1)

382 (3) simile simile

383 (6) simile simile

384 [Six-four-two chords] (6) simile simile

385 (9) simile simile

386 (1) simile simile

387 (3) simile simile

388 [Diminished Seventh Chords] (3) (6) (9) (12) simile simile

389 (3) (6) (9) (12) simile simile

390 (3) (6) (9) (12) simile simile

391 (3) (6) (9) (12) simile simile

# Sesquitone Progression

Equal Division of One Octave into Four Parts



Interpolation of One Note

392 Alternating Semitones and Whole Tones

393 Alternating Whole Tones and Semitones

52

**394** 1 3 5 7 9 11

## Ultrapolation of One Note

395 (5) (6) (11)

396 1 6 12

397 (5) (11)

398 ① ③ ⑤ ⑦ ⑨ ⑪

399 (5) (6) (11) (12)

400 ① ⑥ ⑫

401

## Ultrapolation of Two Notes

402 (5) 11

**403** **1** **3** **5** **7** **9** **11**

404 ①

Sheet music for piano, featuring ten staves of musical notation. The music is in common time and includes various key signatures (G major, A major, B major, C major, D major, E major, F# major, G# major, A# major, B# major). Measure numbers 405 through 409 are indicated at the beginning of each staff, along with circled fingerings.

405 (6)

406 (1) (5) (6) (12)

407 (1) (3) (5) (7) (9) (11)

408 (5) (11)

409 (1) (3) (5) (7) (9) (11)



411 ③ ⑨

412 ⑥

413 ⑥

414 ③ ⑨

415 [12 Tones]  
⑤ ⑪



416 ① ③ ⑤ ⑦ ⑨ ⑪

Measures 416 and 417 of the musical score. Measure 416 starts with a eighth-note followed by sixteenth-note pairs. Measure 417 starts with a eighth-note followed by sixteenth-note pairs.

[12 Tones]

417 ⑤ ⑪

Measures 417 and 418 of the musical score. Measure 417 starts with a eighth-note followed by sixteenth-note pairs. Measure 418 starts with a eighth-note followed by sixteenth-note pairs.

418 ⑤ ⑥

Measures 418 and 419 of the musical score. Measure 418 starts with a eighth-note followed by sixteenth-note pairs. Measure 419 starts with a eighth-note followed by sixteenth-note pairs.

419 ⑤ ⑥

Measures 419 and 420 of the musical score. Measure 419 starts with a eighth-note followed by sixteenth-note pairs. Measure 420 starts with a eighth-note followed by sixteenth-note pairs.

420 ⑥

Measures 420 of the musical score. The staff begins with a eighth-note followed by sixteenth-note pairs.

# Ultrapolation of Three Notes

421 (5) (11) *simile* 

422 (5) *simile* 

423 (1) (3) (5) (7) (9) (11) *simile* 

424 (1) *simile* 

425 (1) *simile* 

426 (5) (11) *simile* 

427 (5) *simile* 

428 (5) *simile* 

429 (5) *simile* 

430 (6) simile simile

431 (5) (11) simile simile

432 (5) simile simile

433 (5) simile simile

434 (10) simile simile

435 (5) simile simile

436 (6) simile simile

437 (5) (11) simile simile

438 (6) (12) simile simile

439 (5) (11) simile simile

440 (1 3 5 7 9 11)

441 (5 11)

442 (6 12)

443 (6 12)

444 (1 7)

445 (1 3 5 7 9 11)

446 (5 11)

## Infrapolation of One Note

447 (5 6 11 12)

448 (1 3 5 7 9 11)

449 (1) (3) (5) (7) (9) (11)



450 (1) (6) (12)



451 (5) (6) (11)



452 (1) (3) (5) (7) (9) (11)



## Infrapolation of Two Notes

453 (5) (11)



454 (6) (9) (12)



455 (5) (11)



456 [12 Tones]



457 (5) (6) (11) (12)



458 (3) (9)



459 (1) (3) (5) (7) (9) (11)



460 (1) (7)



461 (1) (3) (5) (7) (9) (11)



462 (3) (9)



463 (6) (12)





464 (6)

465 (3) (9)

466 (1)

467 (1) (3) (5) (7) (9) (11)

468 (5) (11)

469 (1) (3) (5) (7) (9) (11)

470 (9)

471 (1)

472 (6) (12)

### Infrapolation of Three Notes

473 (5) (11)

*simile*

*simile*

474 (1)

*simile*

*simile*

[Rimsky-Korsakov: Battle Scene from the Opera *Kitezh*]

475 (9)

*simile*

*simile*

476 (6) (12)

*simile*

*simile*

477 (2) (8)

*simile*

*simile*

478 (3) (9)

479 (10)

480 (1)

481 (1) (3) (5) (7) (9) (11)

### Infra - Interpolation

482 (6) (12)

483 (5) (11)

484 (1)

485 (1) (3) (5) (7) (9) (11)

486 (6) (12)

487 (3)

488 (1)

489 (1) (3) (5) (7) (9) (11)

490 (1) (6) (12)

491 (1)

### Inter-Ultrapolation

492 (1)

493 (6) (12)



494 (1) (6) (12)



495 (1)



496 [Shostakovitch: Prelude No.2]

(1) (3) (5) (7) (9) (11)



497 (5) (11)



498 (1) (3) (5) (7) (9) (11)



499 (1)



## Infra-Ultrapolation

500 [12 Tones] (5)

501 (5) (6) (11) (12)

502 (5) (6) (11) (12)

503 [12 Tones] (6) (12)

504 (1) (3) (5) (7) (9) (11)

505 [12 Tones] (5) (11)

506 (1) (3) (5) (7) (9) (11)

507 (1)

508 [12 Tones]  
1 3 5 7 9 11

509 (3) (9)

510 (6)

511 (6) (12)

512 [12 Tones]  
1 3 5 7 9 11

513 (5) (11)

514 (1) (3) (5) (7) (9) (11)



515 (1)



## Infra-Inter-Ultrapolation



523 (1) simile simile

524 (10) simile simile

525 (1) (7) simile simile

526 (1) simile simile

527 (1) simile simile

528 (10) simile simile

529 (11) simile simile

530 (1) (3) (5) (7) (9) (11) simile simile

531 (1) simile simile

532 (1) (3) (11) simile simile

533 (3) (9) simile simile

534 (10) simile simile

535 (6) (12) simile simile

536 (6) (12) simile simile

537 (6) (12) simile simile

538 (6) simile simile

539 (3) simile simile

540 (3) simile simile

541 (12) simile simile

542 (3) (9) simile simile

## Miscellaneous Patterns

543 (10)

544 (3)

545 (2)

546 (1) (3) (5) (7) (9) (11)

547 (5) (11)

548 (1)

549 (10)

550 [Dominant seventh chords] (3)

551 (6)

552 (9)

553 (1)

554 [Six-five chords]

(1)

555 (3)

556 (6)

557 (9)

558 [Six-four-three chords]

(9)

559 (1)

560 (3)

561 (6)

562 [Six-four-two chords]



566 ①



567 ① ③ ⑤ ⑦ ⑨ ⑪



568



[Ravel: Jeux d'eau]



# Whole-Tone Progression

Equal Division of One Octave into Six Parts



569

Harmonizations

Ultrapolation of One Note

570

571

572



## Infrapolation of One Note

579

B - A - C - H



580



581



582



583



584



585





587



### Infra-Interpolation



78

595



596



### Infra-Ultrapolation

597



598



599



600



601



602



603



604



605 *simile*

606 *simile*

607 *simile*

608 *simile*

609 *simile*

610 *simile*

611 *simile*

612 *simile*

613 *simile*

614 *simile*

## Inter-Ultrapolation

615    *simile*                                  *simile*

616    *simile*                                  *simile*

617    *simile*                                  *simile*

618    *simile*                                  *simile*

619    *simile*                                  *simile*

620    *simile*                                  *simile*

621    *simile*                                  *simile*

622    *simile*                                  *simile*

623    *simile*                                  *simile.*

## Infra-Inter-Ultrapolation

624

simile

625

simile

626

simile

simile

627

simile

628

simile

629

simile

simile

630

simile

simile 631

simile 632 simile

simile 633

simile 634 simile

simile 635

simile 636

simile simile

# Semitone Progression

Equal Division of One Octave into Twelve Parts



**Harmonizations**

637

**Permutations**

84

## Harmonization

Musical score for page 84, featuring two staves of harmonization. The top staff uses a treble clef and the bottom staff uses a bass clef. Both staves have a key signature of one sharp (F#) and time signature of common time (indicated by a 'C'). The music consists of eighth-note patterns.

638

Musical score for page 638, featuring two staves of music. The top staff uses a treble clef and the bottom staff uses a bass clef. Both staves have a key signature of one sharp (F#) and time signature of common time (indicated by a 'C'). The music consists of sixteenth-note patterns.

## Harmonization

Musical score for page 638 continuing the harmonization. The top staff uses a treble clef and the bottom staff uses a bass clef. Both staves have a key signature of one sharp (F#) and time signature of common time (indicated by a 'C'). The music consists of eighth-note patterns.

639

Musical score for page 639, featuring two staves of music. The top staff uses a treble clef and the bottom staff uses a bass clef. Both staves have a key signature of one sharp (F#) and time signature of common time (indicated by a 'C'). The music consists of sixteenth-note patterns.

## Harmonization

Musical score page 85, measures 639-640. Treble and bass staves show harmonic patterns. Measure 639 starts with a treble note followed by a bass note with a sharp symbol. Measure 640 starts with a bass note with a sharp symbol.

640

Musical score page 85, measures 640-641. Treble and bass staves show harmonic patterns. Measure 640 starts with a bass note with a sharp symbol.

Musical score page 85, measures 641-642. Treble and bass staves show harmonic patterns. Measure 641 starts with a bass note with a sharp symbol.

## Harmonization

Musical score page 85, measures 642-643. Treble and bass staves show harmonic patterns. Measure 642 starts with a bass note with a sharp symbol.

641

Musical score page 85, measures 643-644. Treble and bass staves show harmonic patterns. Measure 643 starts with a bass note with a sharp symbol.

Musical score page 85, measures 644-645. Treble and bass staves show harmonic patterns. Measure 644 starts with a bass note with a sharp symbol.

## Harmonization

Harmonization

1/8    1/8    1/8    1/8    1/8    1/8    1/8

or    1/8    1/8    1/8    1/8    1/8    1/8

or    1/8    1/8    1/8    1/8    1/8    1/8

or    1/8    1/8    1/8    1/8    1/8    1/8

1/8    1/8    1/8    1/8    1/8    1/8    1/8

1/8    1/8    1/8    1/8    1/8    1/8    1/8

or    1/8    1/8    1/8    1/8    1/8    1/8

642

642

## Harmonization

Harmonization

643

## Harmonization

etc.

644

or

645

Harmonization

646

8

647

8

8

Harmonization

or

90

648

649

650

651

652

653

654

655

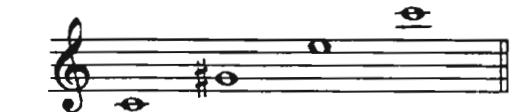
656

657

# Quadritone Progression

91

Equal Division of Two Octaves into Three Parts



Interpolation of One Note

658

659

660

661

662

92

663



664



665



666



667



668



669



670



671



672



673

674

675

676

677

678

679

680

681

682

## Interpolation of Three Notes

683

684

8

685

686

8

687

8

689

690

691

692

693

694

695

696

697

698

699

### Interpolation of Four Notes

700

701

702

703

704

705

706

707

708

709

710

711

### Ultrapolation of One Note

712

713

714

715

716

717

## Infrapolation of One Note

[Rimsky-Korsakov: *Coq d'or*,  
Scene II]

718  
719  
720  
721  
722  
723

## Inter-Infrapolation

724  
725  
726  
727

## Ultra-Interpolation

728

729

730

731

732

### Inter-Infra-Ultrapolation

733

734 [12 tones]

735 [12 tones]

736 [12 tones]

# Sesquiquadritone Progression

Equal Division of Three Octaves into Four Parts



Interpolation of One Note

737

738

739

740

741

742

743

744

Interpolation of Two Notes

745

746

747

748

749 [12 tones]

750

751

752

753 [12 tones]

754 [12 tones]

### Interpolation of Three Notes

755

756

757

758

759

760

102



762



763



764



765



766



767



768



769



770



771

## Interpolation of Four Notes

772

773

774

775

776

777

778

779

780

781

The image displays a sequence of ten musical staves, each containing a single bass line. The staves are numbered sequentially from 772 at the top to 781 at the bottom. Each staff is set against a background of five horizontal lines. The bass lines vary in complexity and pitch, featuring a mix of eighth and sixteenth notes, with some notes having stems pointing up and others down. The music is written in common time, indicated by a 'C' in the upper right corner of each staff. The notes are primarily black, with occasional white notes appearing as grace notes or specific rhythmic markings. The overall pattern suggests a continuous, flowing bassline across the ten measures.

104

782



783



### Ultrapolation of One Note

784



785



786



787



788



### Infrapolation of One Note

789



790



791



792



### Infra-Ultrapolation

793



794



795



## Inter-Infrapolation

796

797

798

799

## Inter-Infra-Interpolation

800

801

802

803

## Ultra-Infra-Interpolation

804

## Inter-Ultrapolation

805

# Quinquetone Progression

Equal Division of Five Octaves into Six Parts



Interpolation of Two Notes

806

807

808

809

810

811



### Interpolation of Three Notes



108



819



820



821



### Ultrapolation of One Note

822



823



### Infrapolation of One Note

824



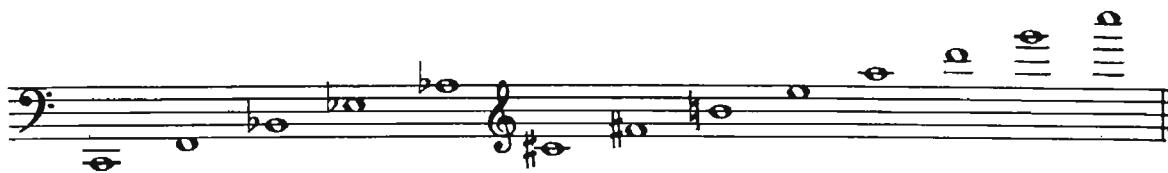
825



# Diatessaron Progression

109

Equal Division of Five Octaves into Twelve Parts



Interpolation of One Note

826



827



8



828



829



Interpolation of Two Notes

830 Phrygian Polytetrachord





831

Musical score for page 110, measure 831. The score consists of two staves. The top staff uses a bass clef and the bottom staff uses a bass clef. Both staves have a common time signature. The music features sixteenth-note patterns. Measure 831 starts with a sixteenth-note pattern on the bass clef staff, followed by a treble clef section with a sixteenth-note pattern. The bass clef staff continues with a sixteenth-note pattern.

8

Musical score for page 110, measure 8. The score consists of two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. Both staves have a common time signature. The music features sixteenth-note patterns. Measure 8 starts with a sixteenth-note pattern on the treble clef staff, followed by a bass clef section with a sixteenth-note pattern. The treble clef staff continues with a sixteenth-note pattern.

832 Minor Polytetrachord

Musical score for page 110, measure 832. The score consists of two staves. The top staff uses a bass clef and the bottom staff uses a bass clef. Both staves have a common time signature. The music features sixteenth-note patterns. Measure 832 starts with a sixteenth-note pattern on the bass clef staff, followed by a treble clef section with a sixteenth-note pattern. The bass clef staff continues with a sixteenth-note pattern.

8

Musical score for page 110, measure 8. The score consists of two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. Both staves have a common time signature. The music features sixteenth-note patterns. Measure 8 starts with a sixteenth-note pattern on the treble clef staff, followed by a bass clef section with a sixteenth-note pattern. The treble clef staff continues with a sixteenth-note pattern.

## Major Polytetrachord

833

8

834

Musical score for page 112, system 835. The score consists of six staves, each containing a series of sixteenth-note patterns. The staves are arranged in two groups of three. The top group starts with a bass clef staff, followed by a treble clef staff, and then another bass clef staff. The bottom group starts with a treble clef staff, followed by a bass clef staff, and then another treble clef staff. The patterns are mostly identical across all staves, with slight variations in pitch and timing.

Musical score for page 112, system 836. The score consists of six staves, arranged in two groups of three. The top group starts with a bass clef staff, followed by a treble clef staff, and then another bass clef staff. The bottom group starts with a treble clef staff, followed by a bass clef staff, and then another treble clef staff. The patterns are mostly identical across all staves, with slight variations in pitch and timing. A measure repeat sign is present in the first staff of the bottom group.

837

### Ultrapolation of One Note

838

839

840

841

842

843

### Ultrapolation of Two Notes

844

845

846

847

Musical score pages 848 through 851, featuring six staves of musical notation. The notation consists of vertical stems with small horizontal dashes indicating pitch and rhythm. Measure numbers 848, 849, 850, and 851 are visible above their respective staves. Measure 848 starts with a treble clef, measure 849 with a bass clef, and so on. Measures 848 and 849 begin with eighth-note patterns. Measures 850 and 851 begin with sixteenth-note patterns.

### Ultrapolation of Three Notes

Musical score pages 852 through 855, featuring six staves of musical notation. The notation consists of vertical stems with small horizontal dashes indicating pitch and rhythm. Measure numbers 852, 853, 854, and 855 are visible above their respective staves. Measures 852 and 853 begin with eighth-note patterns. Measures 854 and 855 begin with sixteenth-note patterns.

116

856



857



858



859



8



860



861



8



862



863



A page of musical notation for piano, featuring ten staves of music. The notation is in common time, with a key signature that changes frequently between major and minor keys. The music is divided into measures by vertical bar lines. Measure numbers are placed above the staves: 8, 864, 865, 866, 867, 868, 869, 870, and 8. Measure 8 starts with a treble clef and a key signature of one flat. Measures 864 through 870 start with a treble clef and a key signature of one sharp. Measure 8 ends with a repeat sign and a double bar line.

## Infrapolation of One Note

871

872

873

874

875

## Infrapolation of Two Notes

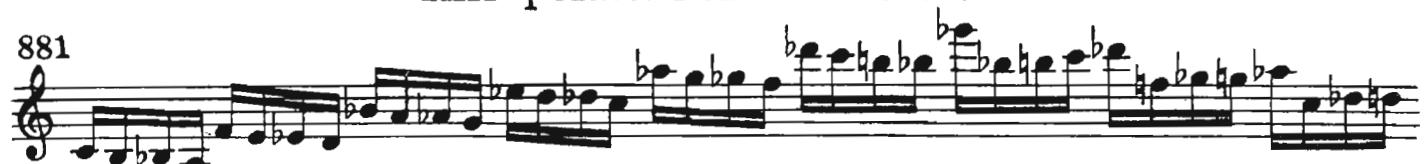
876

877

878



Infrapolation of Three Notes



120

887



888

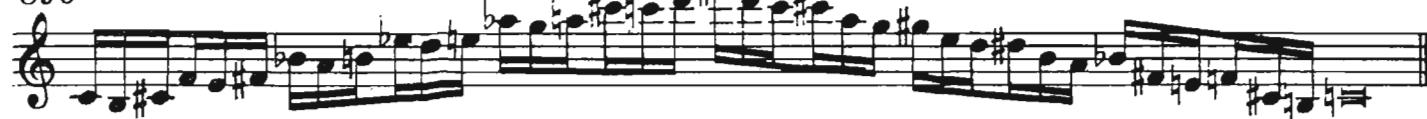


889



## Infra-Interpolation.

890



891



892



893



894

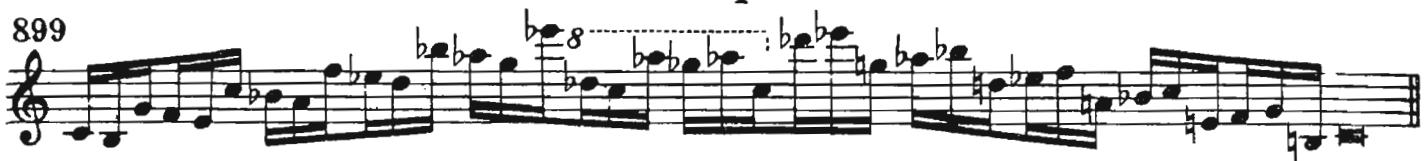


895





### Infra-Ultrapolation



### Inter-Ultrapolation



### Infra-Inter-Ultrapolation



122

905

This image shows a musical score consisting of ten staves of music, likely for a solo instrument. The music is divided into measures by vertical bar lines. Measures 905 through 911 are explicitly numbered. Measure 905 begins with a treble clef, a key signature of one sharp (F#), and a common time signature. Measures 906 through 911 begin with a bass clef, a key signature of one flat (B-flat), and a common time signature. The notation includes various note values such as eighth and sixteenth notes, and rests. Measure 905 contains a fermata over the first note. Measures 906, 907, and 908 each contain a measure repeat sign (double bar line with dots) and a 'b' above it, indicating a change in bass clef. Measures 909 and 910 begin with a treble clef and a key signature of one sharp (F#). Measure 911 begins with a bass clef and a key signature of one flat (B-flat). Measure 906 has a rehearsal mark '906' above it. Measures 907 and 910 have rehearsal marks '907' and '910' respectively above them. Measures 908 and 911 have rehearsal marks '908' and '911' respectively above them. Measure 905 has a rehearsal mark '905' above it. Measure 905 has a fermata over the first note.

906

907

908

909

910

911



### Miscellaneous Patterns

913



914



915



916



917



918



919



920



# Septitone Progression

Equal Division of Seven Octaves into Six Parts

Interpolation of Two Notes

921

922

Interpolation of Three Notes

923

924

[Béla Bartók: Mikrokosmos, №143]

925

# Diapente Progression

Equal Division of Seven Octaves into Twelve Parts



Interpolation of One Note

926

927

928

929

126

930

930

931

931

Interpolation of Two Notes

932

932

933

933

934

934

935

935

936

936

937

937

938

939

940

941

942

943

944

945

Interpolation of Three Notes

946

947

948



949



950



Disjunct Phrygian Polytetrachord

951



952



953



954



955



Disjunct Minor Polytetrachord

956



957



## Disjunct Major Polytetrachord



## Disjunct Lydian Polytetrachord



## Ultrapolation of One Note



130



## Ultrapolation of Two Notes



## Infrapolation of One Note





### Infrapolation of Two Notes



### Infra-Interpolation



988

989

990

991

992

993

994

995

996

997

## Infra-Ultrapolation

A musical score consisting of six staves of music. The staves are numbered 998, 999, 1000, 1001, 1002, and 1003 from top to bottom. Each staff contains a series of notes and rests, primarily in the bass clef, with some notes in the treble clef. The music is highly rhythmic, featuring many sixteenth-note patterns. Measure 998 starts with a bass note followed by a series of eighth and sixteenth notes. Measures 999 and 1000 show more complex patterns with eighth-note groups and sixteenth-note figures. Measures 1001 and 1002 continue this pattern, with measure 1002 ending with a sixteenth-note figure. Measure 1003 begins with a bass note and continues the sixteenth-note patterns.

## Inter-Ultrapolation

A musical score consisting of two staves of music. The staves are numbered 1004 and 1005 from top to bottom. Both staves are in the bass clef and feature dense sixteenth-note patterns. Measure 1004 starts with a bass note and moves through various sixteenth-note figures. Measure 1005 continues the pattern, with a notable change in key signature around the middle of the staff. The music is characterized by its intricate and rapid note sequences.

1006

1007

1008

1009

1010

1011

1012

1013

1014

1015

## Infra-Inter-Ultrapolation

1016

1017

1018

1019

1020

1021

1022

1023

1024

1025

# Sesquiquintetone Progression

Equal Division of Eleven Octaves into Twelve Parts



Interpolation of One Note

1026

1027

Interpolation of Two Notes

1028

1029

1030

1031

1032

1033

# Heptatonic Scales

137

1034

Musical notation for Heptatonic Scale 1034. The notation consists of two systems of music. The first system starts with a treble clef, followed by a bass clef, and then a treble clef again. The second system starts with a bass clef and ends with a bass clef. Both systems feature eighth-note patterns with various accidentals (flat, sharp, natural) and rests.

1035

Musical notation for Heptatonic Scale 1035 Locrian. The notation consists of two systems of music. The first system starts with a treble clef, followed by a bass clef, and then a treble clef again. The second system starts with a bass clef and ends with a bass clef. The notation includes the label "Locrian" above the first system. It features eighth-note patterns with accidentals and rests.

1036

Musical notation for Heptatonic Scale 1036 Phrygian. The notation consists of two systems of music. The first system starts with a treble clef, followed by a bass clef, and then a treble clef again. The second system starts with a bass clef and ends with a bass clef. The notation includes the label "Phrygian" above the first system. It features eighth-note patterns with accidentals and rests.

138

1037



1038

1039

1040

Aeolian

Musical score for Aeolian mode, measures 1040-1041. The score consists of two staves: Treble and Bass. The key signature is A minor (no sharps or flats). The music features eighth-note patterns with slurs and grace notes. Measure 1040 ends with a double bar line. Measure 1041 begins with a bass note followed by a treble note.

139

1041

Dorian

Musical score for Dorian mode, measures 1041-1042. The score consists of two staves: Treble and Bass. The key signature is G major (one sharp). The music features eighth-note patterns with slurs and grace notes. Measure 1041 ends with a double bar line. Measure 1042 begins with a bass note followed by a treble note.

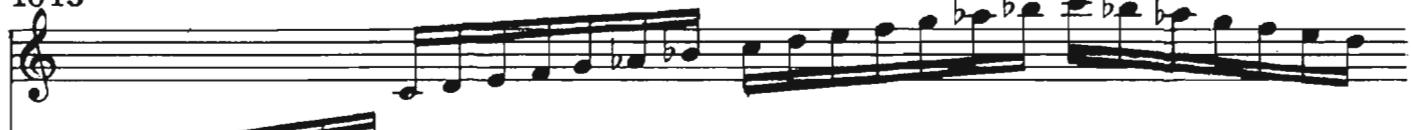
1042

Minor Melodic

Musical score for Minor Melodic mode, measures 1042-1043. The score consists of two staves: Treble and Bass. The key signature is E minor (no sharps or flats). The music features eighth-note patterns with slurs and grace notes. Measure 1042 ends with a double bar line. Measure 1043 begins with a bass note followed by a treble note.

140

1043



1044

Mixolydian



1045

Major



1046 [Howard Hanson: Symphony No 4]

141

Musical score for Howard Hanson's Symphony No. 4, page 141. The score consists of two systems of music. The first system (measures 1046) has two staves: Treble and Bass. The second system (measures 1047) also has two staves: Treble and Bass. The music is written in common time. Measure 1046 starts with a treble clef, a bass clef, and a key signature of one sharp. Measure 1047 starts with a treble clef and a bass clef, both in common time, with a key signature of one sharp.

1047

Lydian

Continuation of the musical score for Howard Hanson's Symphony No. 4, page 141. The score consists of two systems of music. The first system (measures 1047) has two staves: Treble and Bass. The second system (measures 1048) also has two staves: Treble and Bass. The music is written in common time. Measure 1047 starts with a treble clef, a bass clef, and a key signature of one sharp. Measure 1048 starts with a treble clef and a bass clef, both in common time, with a key signature of one sharp.

1048

Final continuation of the musical score for Howard Hanson's Symphony No. 4, page 141. The score consists of two systems of music. The first system (measures 1048) has two staves: Treble and Bass. The second system (measures 1049) also has two staves: Treble and Bass. The music is written in common time. Measure 1048 starts with a treble clef, a bass clef, and a key signature of one sharp. Measure 1049 starts with a treble clef and a bass clef, both in common time, with a key signature of one sharp.

142  
1049

Musical score for measures 142 and 1049. The score consists of two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one sharp (F#), and a common time signature. The Bass staff has a bass clef, a key signature of one sharp (F#), and a common time signature. The music features eighth-note patterns with various accidentals (sharps and naturals).

### Heptatonic Scales with an Augmented Second

1050

Musical score for measure 1050. The score consists of two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one sharp (F#), and a common time signature. The Bass staff has a bass clef, a key signature of one sharp (F#), and a common time signature. The music features eighth-note patterns with various accidentals (sharps and flats).

1051

Musical score for measure 1051. The score consists of two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one sharp (F#), and a common time signature. The Bass staff has a bass clef, a key signature of one sharp (F#), and a common time signature. The music features eighth-note patterns with various accidentals (sharps and flats).

1052

Musical score for page 143, measures 1052-1053. The score consists of two systems of music, each with two staves: Treble (G-clef) and Bass (F-clef). The key signature changes between measures. Measure 1052 starts in G major (no sharps or flats), followed by a section in A major (one sharp), then a section in E major (two sharps), and finally a section in F major (one sharp). Measure 1053 begins in C major (no sharps or flats), followed by a section in B-flat major (two flats), then a section in A major (one sharp), and finally a section in G major (no sharps or flats). The music features various note values (eighth, sixteenth, thirty-second) and rests, with dynamic markings like piano (p) and forte (f).

1053

Continuation of the musical score for page 143, measures 1053-1054. The score continues with two systems of music, Treble and Bass staves. The key signature remains consistent with the previous measure, starting in C major (no sharps or flats), moving to B-flat major (two flats), then to A major (one sharp), and finally to G major (no sharps or flats). The music maintains its rhythmic pattern of eighth, sixteenth, and thirty-second notes, with corresponding rests and dynamic markings.

1054

Final continuation of the musical score for page 143, measures 1054-1055. The score concludes with two systems of music, Treble and Bass staves. The key signature remains the same as the previous measures, starting in C major (no sharps or flats), moving to B-flat major (two flats), then to A major (one sharp), and finally to G major (no sharps or flats). The music ends with a final section in G major (no sharps or flats), featuring a series of eighth and sixteenth notes.

144

1055



1056



1057



1058

1058

"Enigmatic Scale" of Verdi

1059

1060

1060

146

1061



Musical score for page 1061, measures 148-149. The score continues with two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one flat, and a common time signature. The Bass staff has a bass clef, a key signature of one flat, and a common time signature. The music maintains the eighth-note patterns and accidentals established in the previous measures.

Musical score for page 1062, measures 150-151. The score continues with two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one flat, and a common time signature. The Bass staff has a bass clef, a key signature of one flat, and a common time signature. The music maintains the eighth-note patterns and accidentals established in the previous measures.

Musical score for page 1062, measures 152-153. The score continues with two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one flat, and a common time signature. The Bass staff has a bass clef, a key signature of one flat, and a common time signature. The music maintains the eighth-note patterns and accidentals established in the previous measures.

Musical score for page 1063, measures 154-155. The score continues with two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one flat, and a common time signature. The Bass staff has a bass clef, a key signature of one flat, and a common time signature. The music maintains the eighth-note patterns and accidentals established in the previous measures.

Musical score for page 1063, measures 156-157. The score continues with two staves: Treble and Bass. The Treble staff has a treble clef, a key signature of one flat, and a common time signature. The Bass staff has a bass clef, a key signature of one flat, and a common time signature. The music maintains the eighth-note patterns and accidentals established in the previous measures.

1064

Musical score for page 147, measures 1064-1065. The score consists of two staves: Treble and Bass. Measure 1064 starts with a treble note followed by a bass note. Both staves then play eighth-note patterns with various accidentals (flat, sharp, natural). Measures 1064 and 1065 conclude with chords in common time.

1065

Continuation of the musical score from measure 1065. The Treble staff begins with a note followed by a bass note, then continues with eighth-note patterns. The Bass staff follows a similar pattern. The score concludes with chords in common time.

1066

Continuation of the musical score from measure 1066. The Treble staff begins with a note followed by a bass note, then continues with eighth-note patterns. The Bass staff follows a similar pattern. The score concludes with chords in common time.

148

1067



1068



1069



1070

A musical score page featuring two staves of music. The top staff is in treble clef and the bottom staff is in bass clef. Both staves show continuous eighth-note patterns with various accidentals (flat, sharp, natural) and slurs. The music is divided into measures by vertical bar lines.

1071

A continuation of the musical score from page 1070. It consists of two staves of music, treble and bass, showing eighth-note patterns with accidentals and slurs. The music is divided into measures by vertical bar lines.

1072

A continuation of the musical score from page 1071. It consists of two staves of music, treble and bass, showing eighth-note patterns with accidentals and slurs. The music is divided into measures by vertical bar lines.

150

1073

1073

1074

1075

1075

1076



1077

Musical score for page 151, system 1077. The score continues from system 1076. The Treble staff has a treble clef and four sharps. The Bass staff has a bass clef and one sharp. The music consists of two measures of eighth-note patterns with accidentals and grace notes. The bass staff includes a dynamic marking "p" (piano).

1078

Minor Harmonic

Musical score for page 151, system 1078. The score continues from system 1077. The Treble staff has a treble clef and four sharps. The Bass staff has a bass clef and one sharp. The music consists of two measures of eighth-note patterns with accidentals and grace notes. The bass staff includes a dynamic marking "p" (piano). The title "Minor Harmonic" is written above the first measure of the Treble staff.

152

1079 Major Harmonic

## Heptatonic Scales with Two Augmented Seconds

1080

1081

1082

Musical score for page 153, measures 1082-1083. The score consists of two staves: Treble and Bass. The Treble staff has a key signature of one sharp (F#) and the Bass staff has a key signature of one flat (B-flat). Both staves show eighth-note patterns with various slurs and grace notes.

1083

Continuation of the musical score for page 153, measures 1083-1084. The staves remain the same: Treble (one sharp) and Bass (one flat). The patterns continue with eighth-note groups and slurs.

1084

Final continuation of the musical score for page 153, measure 1084. The staves remain the same: Treble (one sharp) and Bass (one flat). The patterns conclude with eighth-note groups and slurs.

154

1085



1086



1087



# Heptatonic Arpeggios

[Busoni: *Fantasia Contrappuntistica*]

1088

1089 Locrian

1090 Phrygian

1091

1092

1093

1094 Aeolian

1095 Dorian

1096 Minor Melodic

1097

156

Mixolydian



1099 Major



1100



1101 Lydian



1102



1103



1104



1105



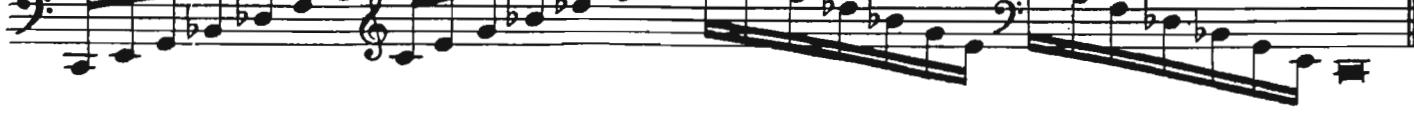
1106



1107



1108



1109

1110

1111

1112

1113

1114

1115

1116

1117

1118

1119

This page contains ten staves of musical notation, likely for a guitar or bass. Each staff begins with a bass clef and a key signature of one sharp (F#). The music consists of eighth-note patterns. Measure numbers 1109 through 1119 are written above each staff. The notes are primarily on the A, C, E, G, and B strings of a guitar, with some notes on the D string. The patterns show a general upward trend in pitch from left to right within each measure.

158

1120

1121

1122

1123

1124

1125

1126

1127

1128

1129

1130

1131

1132 Minor Harmonic

1133 Major Harmonic

1134

1135

1136

1137

1138

1139

1140

1141

This block contains ten staves of musical notation, each with two measures. The notation is primarily in common time. Measure 1131 starts with a bass clef, a key signature of one flat, and a common time signature. Measure 1132 starts with a treble clef, a key signature of one sharp, and a common time signature. Measures 1133 through 1141 follow a similar pattern, alternating between bass and treble clefs and changing key signatures. The music features eighth and sixteenth note patterns, with various accidentals like flats and sharps. The labels 'Minor Harmonic' and 'Major Harmonic' are placed above staves 1132 and 1133 to indicate harmonic changes.

# Pentatonic Scales

1142

Musical score for exercise 1142. It consists of two staves: Treble and Bass. The music is in common time. The notes are mostly eighth notes, with some sixteenth-note patterns. The key signature is one flat (B-flat). The bass staff has a bass clef, and the treble staff has a treble clef.

1143

Musical score for exercise 1143. It consists of two staves: Treble and Bass. The music is in common time. The notes are mostly eighth notes, with some sixteenth-note patterns. The key signature is one flat (B-flat). The bass staff has a bass clef, and the treble staff has a treble clef.

1144 Javanese *Pelog* Scale

Musical score for exercise 1144, featuring the Javanese *Pelog* Scale. It consists of two staves: Treble and Bass. The music is in common time. The notes are mostly eighth notes, with some sixteenth-note patterns. The key signature is one flat (B-flat). The bass staff has a bass clef, and the treble staff has a treble clef.

1145

Musical score for exercise 1145. It consists of two staves: Treble and Bass. The music is in common time. The notes are mostly eighth notes, with some sixteenth-note patterns. The key signature is one sharp (F-sharp). The bass staff has a bass clef, and the treble staff has a treble clef.

1146

Musical score for exercise 1146. It consists of two staves: Treble and Bass. The music is in common time. The notes are mostly eighth notes, with some sixteenth-note patterns. The key signature is one sharp (F-sharp). The bass staff has a bass clef, and the treble staff has a treble clef.

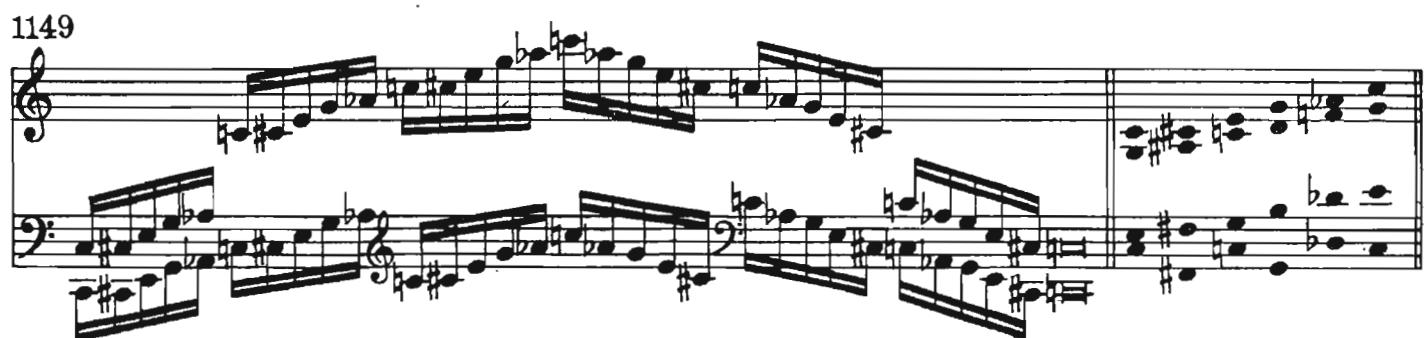
1147



1148



1149



1150 [Scriabin: Sonata №7]



1151



1152



1153 Japanese Hira-Joshi Scale



1154



1155



1156



1157



1158



1159



1160



1161



164

1162



1163



1164



1165



1166



1167



1168



1169



1170



1171



1172



1173



166

1174



1175



1176



1177



1178



1179



1180



1181



1182



1183



1184



1185



1186



1187



1188



1189



1190



# Bitonal Arpeggios

1191 C Major &amp; C Minor

1192 C Major &amp; D♭ Major

1193 C Major &amp; C♯ Minor

1194 C Major &amp; D Major

1195 C Major &amp; D Minor

170

1196 C Major &amp; E♭ Major



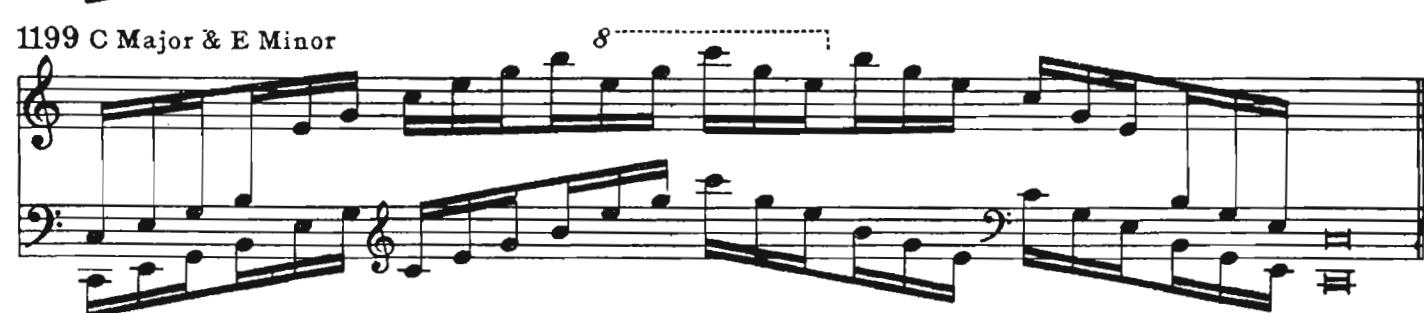
1197 C Major &amp; E♭ Minor



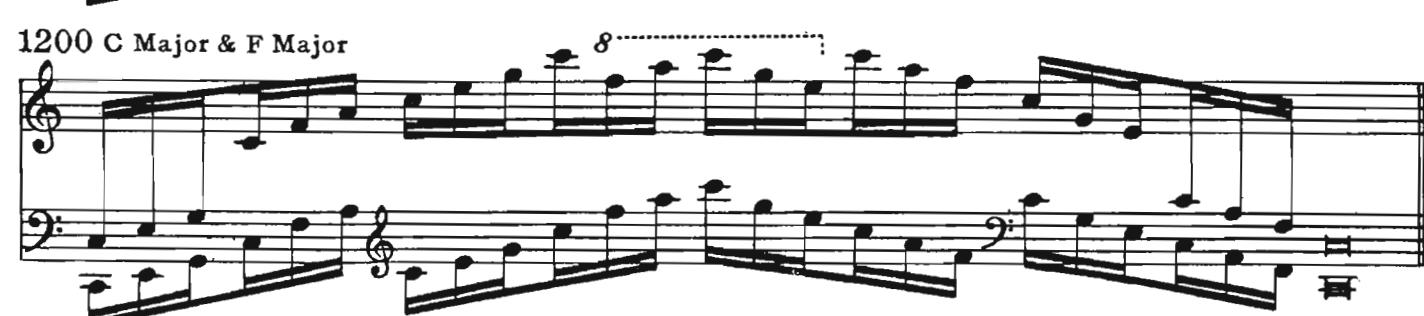
1198 C Major &amp; E Major



1199 C Major &amp; E Minor



1200 C Major &amp; F Major



1201 C Major &amp; F Minor



1202 C Major &amp; F♯ Major

Sheet music for exercise 1202. It consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in F♯ Major (B clef). Both staves feature eighth-note patterns that move from left to right across the page.

1203 C Major &amp; F♯ Minor

Sheet music for exercise 1203. It consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in F♯ Minor (A clef). Both staves feature eighth-note patterns that move from left to right across the page.

1204 C Major &amp; G Major

Sheet music for exercise 1204. It consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in G Major (C clef). Both staves feature eighth-note patterns that move from left to right across the page.

1205 C Major &amp; G Minor

Sheet music for exercise 1205. It consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in G Minor (A clef). Both staves feature eighth-note patterns that move from left to right across the page.

1206 C Major &amp; A♭ Major

Sheet music for exercise 1206. It consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in A♭ Major (F clef). Both staves feature eighth-note patterns that move from left to right across the page.

1207 C Major &amp; G♯ Minor

Sheet music for exercise 1207. It consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in G♯ Minor (A clef). Both staves feature eighth-note patterns that move from left to right across the page.

172

1208 C Major &amp; A Major



1209 C Major &amp; A Minor



1210 C Major &amp; B♭ Major



1211 C Major &amp; B♭ Minor



1212 C Major &amp; B Major



1213 C Major &amp; B Minor



# Twelve-Tone Patterns

## Dodecaphonic

173

1214a Thirds



1214b [Retrograde Pattern]



1215a Fourths



1215b



1216a



1216b



1217a



1217b



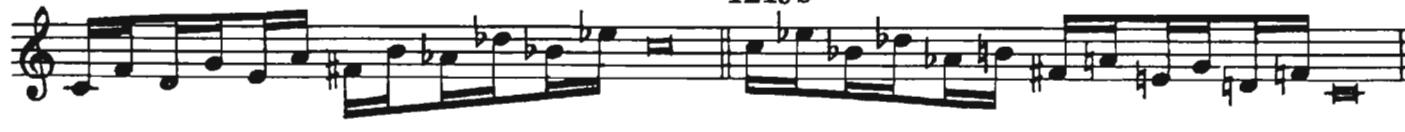
1218a



1218b



1219a



1219b



1220a Fifths



1220b



1221a



1221b



1222a



1222b



1223a Sixths

A musical score for piano, featuring two staves of music. The left staff begins with a treble clef, a key signature of one sharp, and a common time signature. The right staff begins with a bass clef, a key signature of one flat, and a common time signature. Measure 1223a (left) consists of six eighth-note chords in the treble staff and six eighth-note chords in the bass staff. Measure 1223b (right) consists of six eighth-note chords in the treble staff and six eighth-note chords in the bass staff.

1224a

1225a

A musical score for a string instrument, likely cello or bass. The score consists of two staves of five-line music. Measure 1225a starts with a treble clef, a key signature of one flat, and a common time signature. It contains six notes: a quarter note followed by a eighth-note pair, then a eighth-note pair with a sharp sign, another eighth-note pair with a sharp sign, and a final eighth note. Measure 1225b begins with a bass clef, a key signature of one sharp, and a common time signature. It contains six notes: a quarter note followed by a eighth-note pair with a sharp sign, then a eighth-note pair with a sharp sign, another eighth-note pair with a sharp sign, and a final eighth note.

### 1226a Minor Sevenths

The image shows two staves of musical notation. The first staff, labeled '1226a Minor Sevenths', begins with a treble clef and a key signature of one flat. It consists of a series of eighth-note chords: B-flat major, A major, G major, F major, E major, D major, C major, B-flat major, A major, G major, F major, E major, D major, C major, B-flat major, A major, G major, and F major. The second staff, labeled '1226b', begins with a bass clef and a key signature of one flat. It consists of a series of eighth-note chords: B-flat major, A major, G major, F major, E major, D major, C major, B-flat major, A major, G major, F major, E major, D major, C major, B-flat major, A major, G major, and F major.

1227a

A musical score page featuring two staves of music. The first staff, labeled '1227a', begins with a treble clef and a key signature of one flat. It consists of six measures of music, ending with a double bar line. The second staff, labeled '1227b', begins with a bass clef and a key signature of one sharp. It also consists of six measures of music, ending with a double bar line.

1228a

A musical score for piano, featuring two staves. The left staff begins with a treble clef, a key signature of one flat, and a common time signature. The right staff begins with a bass clef, a key signature of one sharp, and a common time signature. Measure 1228a consists of six measures of music, ending with a double bar line. Measure 1228b begins with a repeat sign and continues for three more measures. The music includes various note values such as eighth and sixteenth notes, and rests. Sharp and flat symbols are used to indicate key changes.

## Major Sevenths

1229a

A musical score page featuring two staves of music. The left staff, labeled '1229a', begins with a treble clef and a key signature of one sharp. It consists of six measures of music, ending with a double bar line. The right staff, labeled '1229b', begins with a bass clef and a key signature of one sharp. It also consists of six measures of music, ending with a double bar line. The music is written in a dense, rhythmic style with many eighth and sixteenth note patterns.

1230a

A musical score excerpt featuring two measures, 1230a and 1230b. The music is written for multiple voices or instruments on a five-line staff. Measure 1230a begins with a treble clef, a key signature of one sharp, and a common time signature. It consists of six eighth-note groups. Measure 1230b begins with a bass clef, a key signature of one flat, and a common time signature. It also consists of six eighth-note groups. The notes are primarily black, with some white notes indicating rests or specific performance techniques.

1231a

A musical score page featuring two measures of music. Measure 1231a begins with a treble clef, a key signature of one flat, and a common time signature. The melody consists of eighth and sixteenth note patterns. Measure 1231b begins with a key signature of one sharp. Both measures include dynamic markings such as piano (p) and forte (f). The score is written on five-line staves.

## Twelve-Tone Spirals

1232a

1232b

1233a

1233b

1234a

1234b

1235a

1235b

1236a Converging and Diverging Whole-Tone Scales

1236b

1237a

1237b

1238a

1238b

1239a

1239b

1240a

1240b

## Mutually Exclusive Diminished-Seventh Chords

1241a                          1241b

## Mutually Exclusive Augmented Triads

1242a                          1242b

## Crossing Intervals

## Crossing Sixths

1243a                          1243b

## 1244a

## 1244b

Crossing Fifths  
1245a

## 1245b

Crossing Fourths  
1246a

## 1246b

## 1247a Crossing Thirds

## 1247b

## 1248a

## 1248b

## 1249a

## 1249b

## 1250a Crossing Seconds

## 1250b

## Division of Twelve Tones into Four Mutually Exclusive Triads

Two Major and Two Minor Triads

Two Augmented, One Major, One Minor Triads

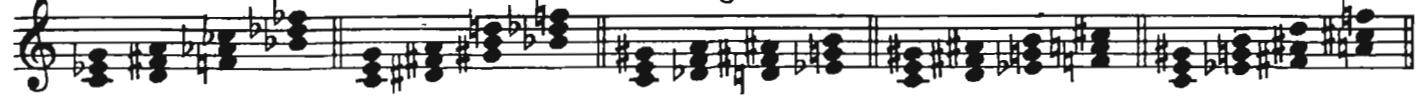
## Augmented, Major, Minor, Diminished Triads



## Two Diminished, One Major, One Minor Triads



## Four Augmented Triads



## Quadridental Arpeggios

1251



1252



1253



1254

1255 [Slonimsky: *Moto Perpetuo*]

1256



1257

1258

1259

1260

1261

1262

1263

1264

1265

1266

The image shows ten staves of musical notation, each labeled with a number from 1257 to 1266. The notation is primarily for a bass clef part, with occasional changes to treble clef. Key signatures vary throughout the staves, including F major, C major, G major, D major, A major, E major, B major, F# minor, B# minor, and E# minor. The music is composed of sixteenth-note patterns, often featuring accidentals such as sharps and flats. The staves are separated by vertical bar lines, and the overall style is complex and rhythmic.

1267

1268

1269

1270

1271

## Inversions

1272

1273

1274

1275

1276



1277



1278



1279



1280



1281



1282



1283



1284



1285



182

1286



1287



1288



1289



1290



1291



1292



### Miscellaneous Dodecaphonic Patterns

1293 Two Major Hexachords



1294



A musical score for piano, consisting of six staves of music. The music is numbered sequentially from 1295 to 1300. The score is written in common time, with a treble clef and a key signature of one sharp (F#). The music features various note values, including eighth and sixteenth notes, and includes several rests. The piano keys are indicated by black and white squares under the notes.

1295

1296

1297

1298

1299

1300

# Invertible Dodecaphonic Progressions

## With All Different Intervals

(Figures indicate number of semitones)

**1301**

Figure 11 (top), Figure 5 (bottom), Inversion 10 (center).

**1302**

Figure 11 (top), Figure 4 (bottom), Inversion 8 (center).

**1303**

Figure 10 (top), Figure 9 (bottom), Inversion 10 (center).

**1304**

On a Minor Triad, Figure 9 (top), Figure 10 (bottom), Inversion 10 (center).

**1305**

Figure 9 (top), Figure 11 (bottom), Inversion 4 (center).

**1306**

On a Major Triad, Figure 8 (top), Figure 5 (bottom), Inversion 10 (center).

**1307**

On a Minor Sixth-Chord, Figure 8 (top), Figure 6 (bottom), Inversion 6 (center).

**1308**

On a Minor Six-Four Chord, Figure 7 (top), Figure 8 (bottom), Inversion 6 (center).

## On a Major Six-Four Chord

1309

Inversion

1310

Inversion

1311

Inversion

1312

Inversion

## White-Key Row of Six Notes

1313

Inversion

1314

Inversion

## White-Key Row of Six Notes

## White-Key Row of Six Notes

1315

Inversion

1316

Inversion

## Mother Chord

## Grandmother Chord

1317

Inversion

1318

Inversion

## Intervallic Series

Increasing and Diminishing Intervals

1319

1320

1321

1322

1323

1324

1325

1326

1327

1328

1329

1330

## Mirror Interval Progressions

187

Scales №1 and №4



Scales №10 and №7



№21 and №15



№53 and №80



№80 and №53



№117 and №111



№156 and its Melodic Inversion



№306 and №297



№543 and its Melodic Inversion



## Complementary Scales

C Major and Pentatonic

Mutually Exclusive Whole-Tone Scales

Nº7

Nº9

Nº10

Nº11

Nº12

## Permutations

Scale Nº12



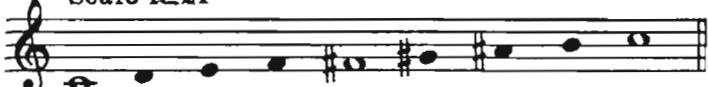
Permutations



## Harmonization

Musical score for "Harmonization". The top staff is in G major with a treble clef, and the bottom staff is in C major with a bass clef. The score includes dynamic markings such as *p*, *pp*, and *rit.*. Performance instructions like "Ped." are placed under specific notes in both staves.

## Scale №21



## Permutations

A single staff in G major showing a permutation of the notes from Scale №21. The notes are played in a different order than the original scale.

A single staff in G major showing a permutation of the notes from Scale №21. The notes are played in a different order than the original scale.

A single staff in G major showing a permutation of the notes from Scale №21. The notes are played in a different order than the original scale.

A single staff in G major showing a permutation of the notes from Scale №21. The notes are played in a different order than the original scale.

A single staff in G major showing a permutation of the notes from Scale №21. The notes are played in a different order than the original scale.

## Pattern №141



Permutations

Five staves of musical notation showing various permutations of Pattern №141, demonstrating different note groupings and rhythms.

## Scale №183



Permutation

A staff of musical notation showing a permutation of Scale №183, featuring eighth-note patterns.

## Scale №184



Permutation

A staff of musical notation showing a permutation of Scale №184, featuring eighth-note patterns.

## Scale №185



Permutation

A staff of musical notation showing a permutation of Scale №185, featuring eighth-note patterns.

## Pattern N°343

Permutations

Musical score for Pattern N°343, featuring a single melodic line on a treble clef staff. The pattern consists of six measures of music, each starting with a different note and featuring various note heads and stems.

## Pattern N°525

Permutations

Musical score for Pattern N°525, featuring a single melodic line on a treble clef staff. The pattern consists of five measures of music, each starting with a different note and featuring various note heads and stems.

## Pandiatonic Progressions

The musical score consists of ten staves of music. The music is in common time with a treble clef. The notes are represented by various symbols: circles, squares, and triangles. Some notes have stems pointing up, while others have stems pointing down. The music is divided into measures by vertical bar lines. The first staff starts with a series of eighth-note pairs. Subsequent staves introduce more complex patterns, including sixteenth-note figures and different note head shapes. Measure 10 concludes with a final measure ending with a double bar line.

## Conjugate Pandiatonic Progressions

193

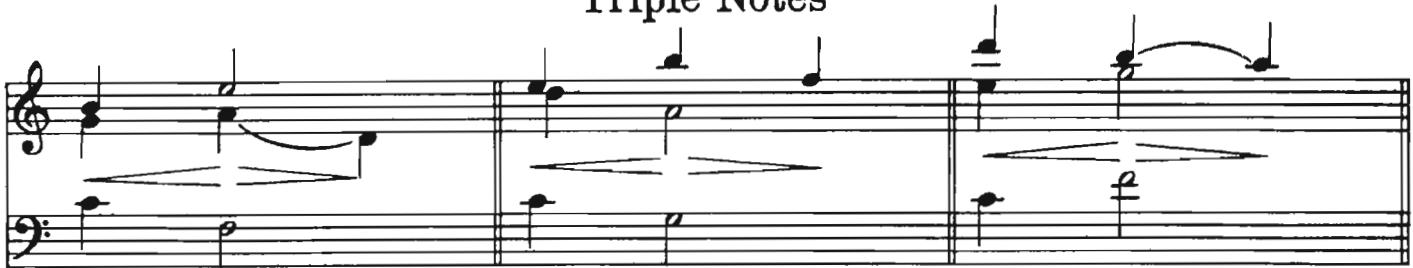
Inversion                      Retrograde                      Retrograde Inversion

The musical examples consist of nine staves of music, each with a treble clef and five horizontal lines. The music is divided into measures by vertical bar lines. The first staff shows a sequence of eighth notes. Subsequent staves show various patterns of eighth and sixteenth notes, illustrating different progressions. The staves are labeled at the top: 'Inversion', 'Retrograde', and 'Retrograde Inversion'.

## Double Notes

The musical examples consist of two staves of music, each with a treble clef and five horizontal lines. The music is divided into measures by vertical bar lines. The top staff uses quarter notes and the bottom staff uses eighth notes. Both staves feature a variety of note heads, including solid black dots and hollow circles, with stems pointing in different directions.

## Triple Notes



## Pandiatonic Counterpoint

Two staves of music. The top staff has a treble clef and a 6/8 time signature. The bottom staff has a bass clef and a 6/8 time signature. Both staves show eighth-note patterns.

Two staves of music. The top staff has a treble clef and a 6/8 time signature. The bottom staff has a bass clef and a 6/8 time signature. Both staves show eighth-note patterns.

Two staves of music. The top staff has a treble clef and a 6/8 time signature. The bottom staff has a bass clef and a 6/8 time signature. Both staves show eighth-note patterns.

## Pandiatonic Cadences

Two staves of music. The top staff has a treble clef and a 6/8 time signature. The bottom staff has a bass clef and a 6/8 time signature. The music includes dynamic markings like  $\text{d}$ ,  $\text{p}$ , and  $\text{f}$ , and a performance instruction "espr."

Two staves of music. The top staff has a treble clef and a 6/8 time signature. The bottom staff has a bass clef and a 6/8 time signature. The music includes dynamic markings like  $\text{d}$ ,  $\text{p}$ , and  $\text{f}$ .

### Pandiatonic Harmony in Four Parts

Lento

Andante

Andantino

Allegretto

Allegro

### Pandiatonic Harmony in Five Parts

### Pandiatonic Harmony in Six Parts

### Pandiatonic Harmony in Seven Parts

[Roy Harris:  
Slumber]

# Double Notes

## Tritone Progression

The musical score contains ten staves of double-note exercises. Each staff is numbered from 5 to 33. The exercises are composed of two voices playing eighth-note pairs simultaneously, primarily using tritone intervals. The patterns involve various combinations of sharps and flats across different keys.

- (5)
- (6)
- (7)
- (8)
- (9)
- (10)
- (11)
- (12)
- (13)
- (14)
- (15)
- (16)
- (17)
- (18)
- (19)
- (20)
- (21)
- (32)
- (33)

Numbers in parentheses refer to patterns from which the double notes are derived.

(34)

(35)

(36)

(37)

(38)

(39)

(40)

(41 to 58) simile

(59a)

(59b)

(60a)

(60b)

(61a)

(61b)

(62a)

(62b)

(63a)

(63b)

(64a)

(64b)

(65a) (65b) (66a) (66b) (67a)

(67b) (68a) (68b) (69a) (69b)

(70a) (70b) (71a) (71b) (72a)

(72b) (72c) (73a) (73b) (73c)

(74a) (74b) (74c) (75a) (75b)

(75c) (76a) (76b) (76c) (77a)

(77b) (77c) (78a) (78b) (78c)

(80 to 84) *simile*

(79a) (79b) (79c) (85a) (85b)

(86a) (86b) (87a) (87b) (88a)

(88b) (89a) (89b) (90a) (90b)

A page of musical notation consisting of 18 staves of music, each labeled with a reference number. The staves are arranged in three columns of six staves each. The first column contains staves (91a) through (98c). The second column contains staves (99a) through (103b). The third column contains staves (104a) through (107b). The music is written in treble clef and includes various note heads, stems, and rests.

(91a) (91b) (92a) (92b) (93a) (93b)  
(94a) (94b) (94c) (95a) (95b)  
(95c) (96a) (96b) (96c) (97a)  
(97b) (97c) (98a) (98b) (98c)  
  
(99a)  
(99b)  
  
(100a) (100b) (101a) (101b)  
(102a) (102b) (103a) (103b)  
(104a) (104b) (105a) (105b)  
(106a) (106b) (107a) (107b)

(108a) (108b) (109a) (109b) (110a)  
(110b) (111a) (111b) (112a) (112b)  
(113a) (113b) (114a) (114b) (115a)  
(115b) (116a) (116b) (117a) (117b)  
(118a) (118b)  
(119a) (119b) (120a) (120b) (121a)  
(121b) (122a) (122b) (123a) (123b)  
(124a) (124b) (125a) (125b) (126a)  
(126b) (127a) (127b) (128a) (128b)  
(129a) (129b) (130a) (130b)

(131a) (131b) (132a) (132b)

(133a) (133b) (134a) (134b)

(135a) (135b) (136a) (136b)

(137a) (137b) (138a) (138b)

(139a) (139b) (140a) (140b)

(141a) (141b) (141c)

(142a) (142b) (142c) (143a) (143b)

(143c) (144a) (144b) (144c) (145a)

(145b) (145c) (146a) (146b) (146c)

(147a) (147b) (147c) (148a) (148b)

(148c) (149a) (149b) (149c) (150a)  
(150b) (150c) (151a) (151b) (151c)  
(152a) (152b) (152c) (153a) (153b)  
(153c) (154a) (154b) (154c) (155a)  
(155b) (155c) (156a) (156b) (156c)  
(157a) (157b) (157c) (158a) (158b)  
(158c) (159a) (159b) (159c) (160a)  
(160b) (160c) (161a) (161b) (161c)  
(162a) (162b) (162c) (163a) (163b)  
(163c) (164a) (164b) (164c) (165a)

(165b) (165c) (166a) (166b) (166c)

(167a) (167b) (167c) (168a) (168b)

(168c) (169a) (169b) (169c) (170a)

(170b) (170c) (171a) (171b) (171c)

(172a) (172b) (172c) (173a) (173b)

(173c) (174a) (174b) (174c) (175a)

(175b) (175c) (176a) (176b) (176c)

(177a) (177b) (177c) (178a)

(178b) (178c) (179a) (179b)

(179c) (180a) (180b) (180c)

## Ditone Progression

(181a)

(181b)

(181c)

(181d)

(182a)

(182b)

(182c)

(182d)

(183a)

(183b)

(183c)

(183d)

(184a)

(184b)

(184c)

(184d)

(185a)

(185b)

(185c)

(185d)

(186a) (186b) (186c) (186d)

(187a) (187b) (187c) (187d)

(188a) (188b) (188c) (188d)

(189a) (189b) (189c) (189d)

(190a) (190b) (190c) (190d)

(191a) (191b) (191c) (191d)

(192a) (192b) (192c) (192d)

(193a) (193b) (194a)

(194b) (195a) (195b)

(196a) (196b) (197a) (197b)

(198a) (198b) (199a) (199b)

(200a) (200b) (201a) (201b)

(202a) (202b) (203a) (203b)

(204a) (204b) (205a) (205b)

(206a) (206b) (207a) (207b)

(208a) (208b) (209a) (209b)

(210a) (210b) (211a) (211b)

(212a) (212b) (213a) (213b)

(214a) (214b) (214c)

(215a) (215b) (215c)

(216a) (216b) (216c)

(217a) (217b) (217c)

(218a) (218b) (218c)

(219a) (219b) (219c)

(220a) (220b) (220c)

(221a) (221b) (221c)

(222a) (222b) (222c)

(223a) (223b) (223c)

(224a) (224b) (224c)

A page of musical notation for piano, featuring 20 numbered measures (225a) through (242a). The music is arranged in two staves. Measure numbers are placed above each measure, and measure (231 to 236) is labeled "simile". The notation includes various note heads, stems, and accidentals.

(225a) (225b) (225c)

(226a) (226b) (226c)

(227a) (227b) (227c)

(228a) (228b) (228c)

(229a) (229b) (229c)

(230a) (230b) (230c)

(231 to 236) *simile*

(237a) (237b)

(238a) (238b) (239a)

(239b) (240a) (240b)

(241a) (241b) (242a)

(242b) (243a) (243b)  
(244a) (244b) (245a)  
(245b) (246a) (246b)  
(247a) (247b) (248a)  
(248b) (249a) (249b)  
(250a) (250b) (251a)  
(251b) (252a) (252b)  
(253a) (253b) (254a)  
(254b) (255a) (255b)  
(256a) (256b) (257a) (257b)

## Sesquitone Progression

(392a)

(392b)

(392c)

(392d)

(392e)

(392f)

(393a)

(393b)

(393c)

(393d)

(393d) (393e) (393f)

(394a)

(394b)

(394c)

(394d)

(394e)

(394f)

(395a)

(395b)

(396a)

(396b)

(397a)

(397b)

(398a)

(398b)

(399a)

(399b)

(400a)

(400b)

(401a)

(401b)

(403-428) *simile*(430-446) *simile*(448-458) *simile*



(460-484) simile



(486-491) *simile*

## Double Notes in Contrary Motion

215

(No.7)

Whole-Tone Scale

(No.36)

(No.182)

(Nº394)



8



(Nº393)



8



(Nº 397)

8

8

(Nº 343)

8

## Plural Scales and Arpeggios

The musical score consists of two staves. The top staff begins with a treble clef, a key signature of one sharp (F#), and a common time signature. The word "Major" is written above the staff. The bottom staff begins with a bass clef, a key signature of one flat (B-flat), and a common time signature. Both staves feature eighth-note patterns with various accidentals (sharps and flats) and grace notes. Measure numbers 8 and 9 are indicated above the staves.

A musical score page featuring two staves of music. The top staff is in treble clef and the bottom staff is in bass clef. Both staves are in 2/4 time and have a key signature of one sharp (F#). The music consists of eighth-note patterns with various accidentals (sharps and flats) and grace notes. Measure 8 begins with a series of eighth-note pairs, followed by a single note, and then another series of eighth-note pairs. Measure 9 continues with eighth-note pairs and concludes with a single note. Measure 10 begins with a single note and ends with a series of eighth-note pairs.

Minor

8

The image shows two staves of musical notation for bass instruments. The top staff begins with a bass clef, followed by a key signature of one sharp (F#), indicating G major. The bottom staff begins with a bass clef, followed by a key signature of one flat (B-flat), indicating E minor. Both staves feature eighth-note patterns with various accidentals (sharps and flats) and slurs. The measure number '8' is positioned above the top staff.

A musical score page featuring two staves of music. The top staff begins with a treble clef, a key signature of one sharp (F#), and a common time signature. It consists of six measures of music, with the first measure containing a dotted half note followed by a sixteenth-note pattern. The bottom staff begins with a bass clef, a key signature of one sharp (F#), and a common time signature. It also consists of six measures, starting with a dotted half note followed by a sixteenth-note pattern.

Major

Minor

Augmented

Diminished-Seventh

## Polytonal Scales

E♭ Major and C Major

A musical score consisting of four staves of music. The top two staves are in E♭ major, indicated by a bass clef and a key signature of one flat. The bottom two staves are in C major, indicated by a bass clef and a key signature of no sharps or flats. The music consists of eighth-note patterns that transition between the two keys.

C Major and E♭ Major

A musical score consisting of four staves of music. The top two staves are in C major, indicated by a bass clef and a key signature of no sharps or flats. The bottom two staves are in E♭ major, indicated by a bass clef and a key signature of one flat. The music consists of eighth-note patterns that transition between the two keys. Measure numbers '8' are present above the first and third staves.

## E Major and C Major

Musical score for E Major and C Major. The score consists of four staves of music. The top two staves are in E Major (three sharps) and the bottom two staves are in C Major (no sharps or flats). The music is written in a treble clef for the top two staves and a bass clef for the bottom two staves. The music is composed of eighth and sixteenth note patterns.

## C Major and E Major

Musical score for C Major and E Major. The score consists of four staves of music. The top two staves are in E Major (three sharps) and the bottom two staves are in C Major (no sharps or flats). The music is written in a treble clef for the top two staves and a bass clef for the bottom two staves. The music is composed of eighth and sixteenth note patterns. Measure numbers 8 and 9 are indicated above the staves.

A Major and C Major



C Major and A Major



A♭ Major and C Major

Musical score for A♭ Major and C Major. The score consists of two staves. The top staff is in A♭ Major (three flats) and the bottom staff is in C Major (no sharps or flats). Both staves feature eighth-note patterns with slurs, primarily consisting of eighth-note pairs.

Continuation of the musical score for A♭ Major and C Major. The top staff continues in A♭ Major, and the bottom staff continues in C Major. The patterns remain eighth-note pairs with slurs.

C Major and A♭ Major

Musical score for C Major and A♭ Major. The top staff is in C Major (no sharps or flats) and the bottom staff is in A♭ Major (three flats). The patterns are eighth-note pairs with slurs.

Continuation of the musical score for C Major and A♭ Major. The top staff continues in C Major, and the bottom staff continues in A♭ Major. The patterns are eighth-note pairs with slurs. Measure numbers '8' are present above both staves.

## Polyrhythmic Scales

3:2

Musical score for 3:2 polyrhythmic scales. The top staff uses a treble clef and has six measures. The bottom staff uses a bass clef and has four measures. The music consists of eighth-note patterns.

4:3

Musical score for 4:3 polyrhythmic scales. The top staff uses a bass clef and has six measures. The bottom staff uses a treble clef and has four measures. The music consists of eighth-note patterns.

Musical score for 4:3 polyrhythmic scales. The top staff uses a treble clef and has six measures. The bottom staff uses a bass clef and has four measures. The music consists of eighth-note patterns.

5: 3

Musical score for 5: 3 section. The score consists of four staves. The top two staves are bass staves, and the bottom two are treble staves. The music is written in common time. The first staff has a bass clef, the second staff has a bass clef, the third staff has a treble clef, and the fourth staff has a bass clef. The music features various note heads and stems, with some notes grouped by vertical lines.

5: 4

Musical score for 5: 4 section. The score consists of four staves. The top two staves are bass staves, and the bottom two are treble staves. The music is written in common time. The first staff has a bass clef, the second staff has a bass clef, the third staff has a treble clef, and the fourth staff has a bass clef. The music features various note heads and stems, with some notes grouped by vertical lines.

## Polytonal Polyrhythmic Scales

E Major and C Major; 3:2

The musical score consists of four staves of music. The top two staves are in E Major (three sharps) and the bottom two are in C Major (no sharps or flats). The music is divided into measures by vertical bar lines. The first measure starts with a bass note in E Major followed by a sixteenth-note pattern. The second measure continues with a similar pattern. The third measure begins with a bass note in C Major. The fourth measure starts with a bass note in E Major. The fifth measure begins with a bass note in C Major. The sixth measure starts with a bass note in E Major. The seventh measure begins with a bass note in C Major. The eighth measure starts with a bass note in E Major.

E Major and C Major; 4:3

The musical score consists of four staves of music. The top two staves are in E Major (three sharps) and the bottom two are in C Major (no sharps or flats). The music is divided into measures by vertical bar lines. The first measure starts with a bass note in E Major followed by a sixteenth-note pattern. The second measure continues with a similar pattern. The third measure begins with a bass note in C Major. The fourth measure starts with a bass note in E Major. The fifth measure begins with a bass note in C Major. The sixth measure starts with a bass note in E Major. The seventh measure begins with a bass note in C Major. The eighth measure starts with a bass note in E Major.

E Major and C Major; 5: 3

Musical score for E Major and C Major, 5:3 time signature. The score consists of two staves. The top staff is in E major (three sharps) and the bottom staff is in C major (no sharps or flats). The music is divided into measures by vertical bar lines. Measure 1 starts with a bass note followed by six eighth notes. Measure 2 starts with a bass note followed by six eighth notes. Measure 3 starts with a bass note followed by six eighth notes. Measure 4 starts with a bass note followed by six eighth notes. Measure 5 starts with a bass note followed by six eighth notes. Measure 6 starts with a bass note followed by six eighth notes. Measure 7 starts with a bass note followed by six eighth notes. Measure 8 starts with a bass note followed by six eighth notes.

Continuation of the musical score for E Major and C Major, 5:3 time signature. The score consists of two staves. The top staff is in E major (three sharps) and the bottom staff is in C major (no sharps or flats). The music is divided into measures by vertical bar lines. Measure 1 starts with a bass note followed by six eighth notes. Measure 2 starts with a bass note followed by six eighth notes. Measure 3 starts with a bass note followed by six eighth notes. Measure 4 starts with a bass note followed by six eighth notes. Measure 5 starts with a bass note followed by six eighth notes. Measure 6 starts with a bass note followed by six eighth notes. Measure 7 starts with a bass note followed by six eighth notes. Measure 8 starts with a bass note followed by six eighth notes.

E Major and C Major; 5: 4

Musical score for E Major and C Major, 5:4 time signature. The score consists of two staves. The top staff is in E major (three sharps) and the bottom staff is in C major (no sharps or flats). The music is divided into measures by vertical bar lines. Measure 1 starts with a bass note followed by six eighth notes. Measure 2 starts with a bass note followed by six eighth notes. Measure 3 starts with a bass note followed by six eighth notes. Measure 4 starts with a bass note followed by six eighth notes. Measure 5 starts with a bass note followed by six eighth notes. Measure 6 starts with a bass note followed by six eighth notes. Measure 7 starts with a bass note followed by six eighth notes. Measure 8 starts with a bass note followed by six eighth notes.

Continuation of the musical score for E Major and C Major, 5:4 time signature. The score consists of two staves. The top staff is in E major (three sharps) and the bottom staff is in C major (no sharps or flats). The music is divided into measures by vertical bar lines. Measure 1 starts with a bass note followed by six eighth notes. Measure 2 starts with a bass note followed by six eighth notes. Measure 3 starts with a bass note followed by six eighth notes. Measure 4 starts with a bass note followed by six eighth notes. Measure 5 starts with a bass note followed by six eighth notes. Measure 6 starts with a bass note followed by six eighth notes. Measure 7 starts with a bass note followed by six eighth notes. Measure 8 starts with a bass note followed by six eighth notes.

C Major and E Major; 3:2

Musical score for C Major and E Major, 3:2. The score consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in E Major (F clef). The music is in common time. The score includes a repeat sign and a measure number 8.

Continuation of the musical score for C Major and E Major, 3:2. The score consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in E Major (F clef). The music is in common time. The score includes a repeat sign and a measure number 8.

C Major and E Major; 4:3

Musical score for C Major and E Major, 4:3. The score consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in E Major (F clef). The music is in common time. The score includes a repeat sign and a measure number 8.

Continuation of the musical score for C Major and E Major, 4:3. The score consists of two staves. The top staff is in C Major (G clef) and the bottom staff is in E Major (F clef). The music is in common time. The score includes a repeat sign and a measure number 8.

C Major and E Major; 5:3

Musical score for C Major and E Major, 5:3 time signature. The score consists of two staves. The top staff is in C Major (F clef) and the bottom staff is in E Major (B clef). The music is divided into measures by vertical bar lines. Measure 1 starts with a dotted half note followed by eighth notes. Measure 2 starts with a dotted half note followed by eighth notes. Measure 3 starts with a dotted half note followed by eighth notes. Measure 4 starts with a dotted half note followed by eighth notes. Measure 5 starts with a dotted half note followed by eighth notes. Measure 6 starts with a dotted half note followed by eighth notes. Measure 7 starts with a dotted half note followed by eighth notes. Measure 8 starts with a dotted half note followed by eighth notes. The music continues in this pattern.

C Major and E Major; 5:4

Musical score for C Major and E Major, 5:4 time signature. The score consists of two staves. The top staff is in C Major (F clef) and the bottom staff is in E Major (B clef). The music is divided into measures by vertical bar lines. Measure 1 starts with a dotted half note followed by eighth notes. Measure 2 starts with a dotted half note followed by eighth notes. Measure 3 starts with a dotted half note followed by eighth notes. Measure 4 starts with a dotted half note followed by eighth notes. Measure 5 starts with a dotted half note followed by eighth notes. Measure 6 starts with a dotted half note followed by eighth notes. Measure 7 starts with a dotted half note followed by eighth notes. Measure 8 starts with a dotted half note followed by eighth notes. The music continues in this pattern.

E♭ Major and C Major; 3: 2

Musical score for E♭ Major and C Major, 3: 2. The score consists of two staves. The top staff is in E♭ major (two flats) and the bottom staff is in C major (no sharps or flats). Both staves use a common time signature. The music is composed of eighth and sixteenth note patterns.

Continuation of the musical score for E♭ Major and C Major, 3: 2. The score continues with two staves. The top staff remains in E♭ major (two flats) and the bottom staff remains in C major (no sharps or flats). The music continues with eighth and sixteenth note patterns.

E♭ Major and C Major; 4: 3

Musical score for E♭ Major and C Major, 4: 3. The score consists of two staves. The top staff is in E♭ major (two flats) and the bottom staff is in C major (no sharps or flats). Both staves use a common time signature. The music is composed of eighth and sixteenth note patterns.

Continuation of the musical score for E♭ Major and C Major, 4: 3. The score continues with two staves. The top staff remains in E♭ major (two flats) and the bottom staff remains in C major (no sharps or flats). The music continues with eighth and sixteenth note patterns.

E♭ Major and C Major; 5: 3

Musical score for E♭ Major and C Major, 5:3 time signature. The score consists of four staves of music. The first two staves are in E♭ Major (Bass clef) and the last two are in C Major (Treble clef). Measure 8 begins with a bass note followed by a series of eighth-note patterns. The music continues with a mix of eighth and sixteenth notes, alternating between the two keys.

E♭ Major and C Major; 5: 4

Musical score for E♭ Major and C Major, 5:4 time signature. The score consists of four staves of music. The first two staves are in E♭ Major (Bass clef) and the last two are in C Major (Treble clef). Measure 8 begins with a bass note followed by a series of eighth-note patterns. The music continues with a mix of eighth and sixteenth notes, alternating between the two keys.

Musical score for E♭ Major and C Major, 5:4 time signature. The score consists of four staves of music. The first two staves are in E♭ Major (Bass clef) and the last two are in C Major (Treble clef). Measure 8 begins with a bass note followed by a series of eighth-note patterns. The music continues with a mix of eighth and sixteenth notes, alternating between the two keys.

### C Major and E♭ Major; 3:2

C Major and E♭ Major; 3:2

8

### C Major and E♭ Major; 4:3

The musical score consists of two staves. The top staff is in C Major (indicated by a C-sharp sign) and 4:3 time signature. It features a bass clef and a treble clef. The bottom staff is in Eb Major (indicated by a B-flat sign) and also has a bass clef. Both staves show six measures of music. Measure 1 starts with eighth-note patterns in C major. Measures 2-3 transition to Eb major with eighth-note patterns. Measures 4-6 return to C major. Measure 7 begins with a bass note in Eb major, followed by eighth-note patterns. Measure 8 concludes the section.

Musical score for piano, page 8, measures 1-4. The score consists of two staves. The top staff uses a treble clef and has a key signature of one sharp (F#). The bottom staff uses a bass clef and has a key signature of one flat (B-flat). The music features eighth-note patterns with various accidentals (sharps and flats) throughout both staves.

C Major and E♭ Major; 5:3

Musical score for C Major and E♭ Major, 5:3 time signature. The score consists of four staves of music. The top two staves are in C Major (G clef) and the bottom two are in E♭ Major (B-flat clef). The music features various note values including eighth and sixteenth notes, and rests. Measure numbers 1 through 8 are indicated above the staves. The score concludes with a final measure ending with a double bar line and repeat dots.

C Major and E♭ Major; 5:4

Musical score for C Major and E♭ Major, 5:4 time signature. The score consists of four staves of music. The top two staves are in C Major (G clef) and the bottom two are in E♭ Major (B-flat clef). The music features various note values including eighth and sixteenth notes, and rests. Measure numbers 1 through 8 are indicated above the staves. The score concludes with a final measure ending with a double bar line and repeat dots.

# Palindromic Canons

234

## Bitonal Palindromic Canon: C Major and F♯ Major

Scale №7 (In Six Parts)

A musical score for a bitonal palindromic canon in six parts. The score consists of six staves, each representing a different part of the canon. The music is written on five-line staffs, and the notes are black dots representing pitch. The score is arranged in a symmetrical, palindromic pattern across the six staves.

## Bitonal Palindromic Canon: F Major and B Major

Scale №12 (In Six Parts)

A musical score for a bitonal palindromic canon in six parts, similar in structure to Scale №7. It features six staves of five-line staffs with black note heads. The music is arranged in a palindromic fashion, creating a mirror image effect across the six voices.

## Two Palindromic Canons on Pattern 72

In Three Parts

(Alternating Minor and Major Triads)

In Three Parts

(Alternating Major and Minor Triads)

## Palindromic Canon on Pattern 141

In Four Parts

Palindromic Canon on Pattern 186

The musical score consists of four staves of music, each representing a different part of a four-part palindromic canon. The parts are arranged vertically, with the top staff being the basso continuo (bassoon) and the bottom staff being the soprano (soprano). The middle two staves represent the alto and tenor voices. The music is written in common time, with a key signature of one sharp (F#). The notes are represented by black dots on the staff lines, and rests are indicated by white spaces. The score is titled "In Four Parts" at the bottom left.

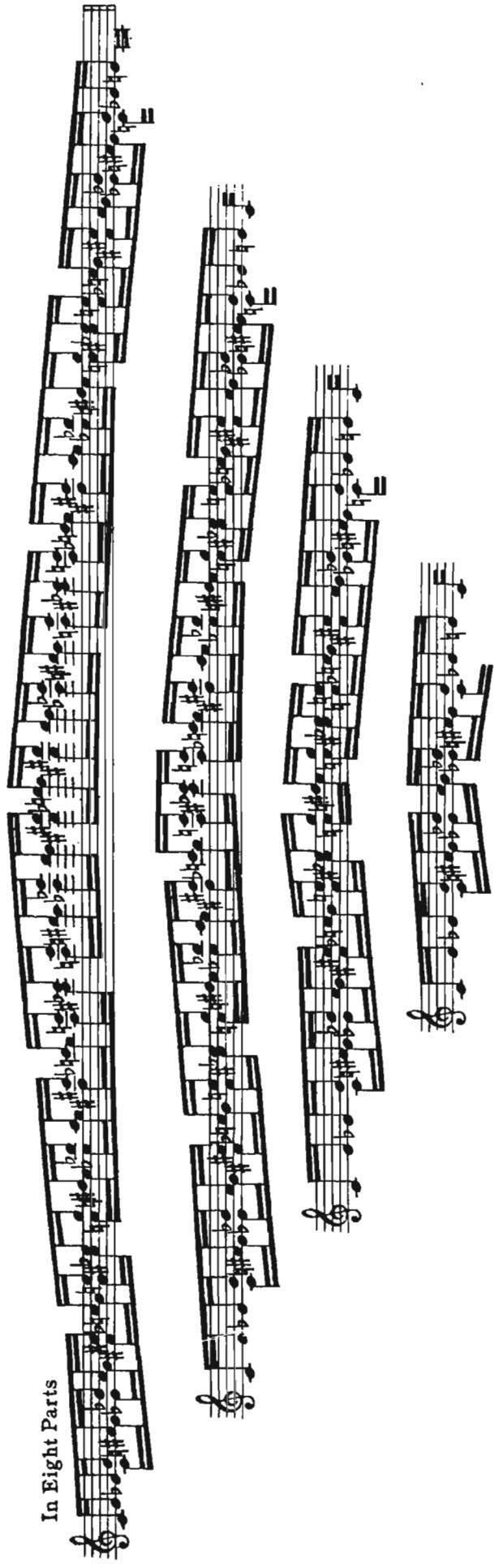
Palindromic Canon on Pattern 231

(Theme from Schoenberg: *Ode to Napoleon*)

The musical score consists of four staves of music, each representing a different part of a four-part palindromic canon. The parts are arranged vertically, with the top staff being the basso continuo (bassoon) and the bottom staff being the soprano (soprano). The middle two staves represent the alto and tenor voices. The music is written in common time, with a key signature of one sharp (F#). The notes are represented by black dots on the staff lines, and rests are indicated by white spaces. The score is titled "In Four Parts" at the bottom left.

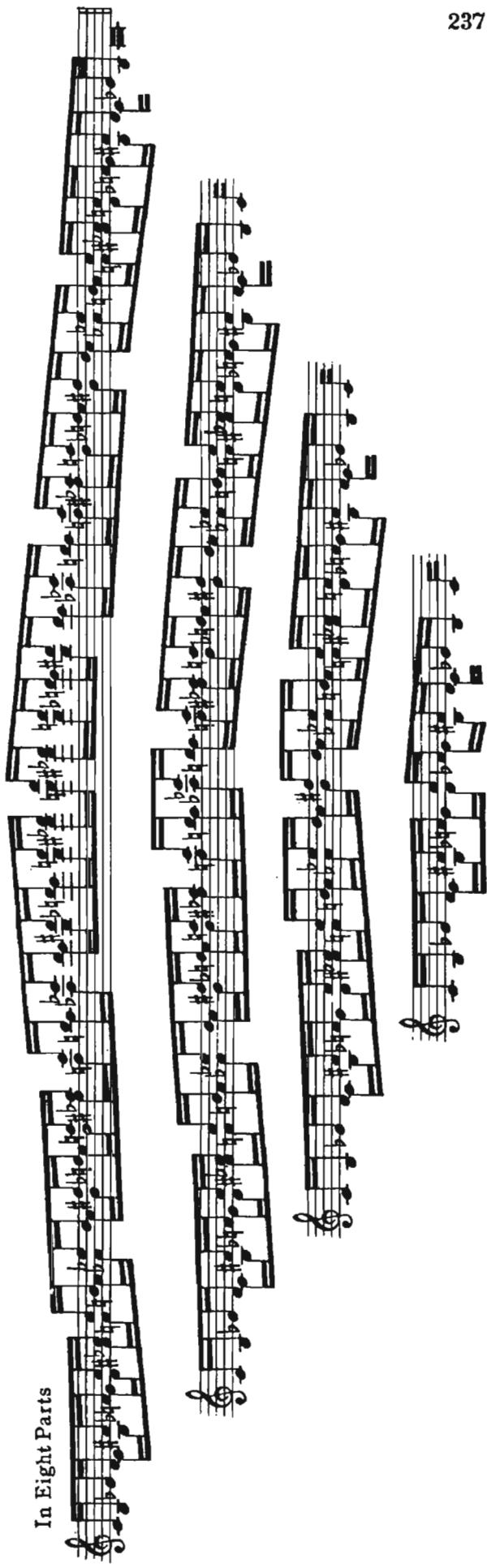
Palindromic Canon on Pattern 394

In Eight Parts



Palindromic Canon on Pattern 447

In Eight Parts



## Autochordal Harmonization

Scale №7

Harmonic analysis:  $\text{G} \quad \text{G}^{\#} \quad \text{G}^{\#}$

Bitonal

Scale №181

Harmonic analysis:  $\text{G}^{\#} \quad \text{B}^{\#} \quad \text{B}^{\#} \quad \text{G}^{\#}$

Bitonal

Pedal points

Combinatory analysis:  $\text{G}^{\#} \quad \text{B}^{\#} \quad \text{B}^{\#} \quad \text{G}^{\#}$

Scale №393

Harmonic analysis:  $\text{G}^{\#} \quad \text{G}^{\#} \quad \text{G}^{\#} \quad \text{B}^{\#} \quad \text{B}^{\#} \quad \text{B}^{\#}$

## Bitonal Major

Musical score for Bitonal Major, featuring two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. The music consists of eighth-note chords. Key changes are indicated by sharp and flat symbols above the staff.

## Bitonal Minor

Musical score for Bitonal Minor, featuring two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. The music consists of eighth-note chords. Key changes are indicated by sharp and flat symbols above the staff.

## Bitonal Major and Minor

Musical score for Bitonal Major and Minor, featuring two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. The music consists of eighth-note chords. Key changes are indicated by sharp and flat symbols above the staff.

## Pedal Points

Musical score for Pedal Points, featuring two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. The music consists of sustained notes (pedal points) with rhythmic patterns above them.

## Combinatory

Musical score for Combinatory, featuring two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. The music includes dynamic markings like *nostalgiquement* and *fatiadiquement*, and performance instructions like *sf*.

## Harmonization in Major Triads

by Alternation of Octave, Tertian  
and Quintan Positions

Melody Line



Octave Position

Tertian Position

Quintan Position

Harmonization in Seventh-Chords,  
Ninth-Chords and  
Whole-Tone Chords

Melody Line



Whole-Tone Chords



Major Ninth-Chords



Minor Ninth-Chords



Whole-Tone Chords



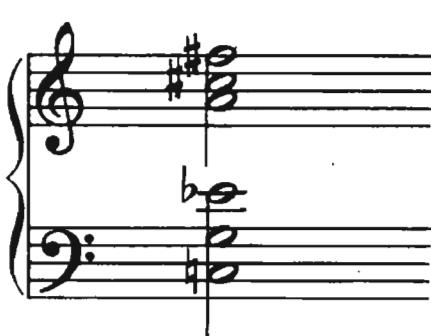
Dominant Seventh-Chords



# Synopsis of Chords



Major  
Bitonal Chord



Minor  
Bitonal Chord



Whole-Tone  
Chord



Prometheus  
Chord  
(Scriabin)



Quartal  
Chord  
Containing All Twelve  
Chromatic Tones Ar -  
ranged in Fourths



Chord  
of the Minor 23rd  
Containing All Twelve  
Chromatic Tones and  
Four Mutually Exclusive  
Triads

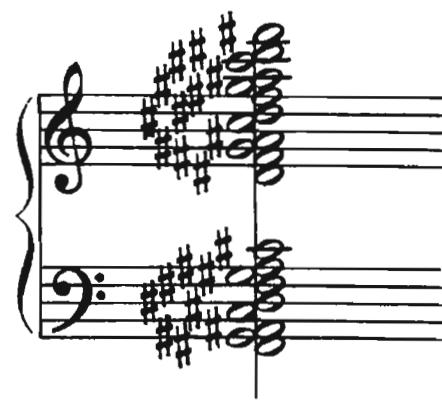


**Pandiatonic  
Chord**

Containing All Seven  
Diatonic Tones



**Pandiatonic  
Tone-Cluster**



**Pentatonic  
Tone-Cluster**



**Pyramid  
Chord**

Containing All Twelve  
Intervals From an Octave  
to a Semitone



**Mother  
Chord**

Containing All Twelve  
Chromatic Tones and  
Eleven Different Inter-  
vals



**Grandmother  
Chord**

Containing All Twelve  
Chromatic Tones and  
Eleven Symmetrically  
Invertible Intervals

## Master Chords

Tritone Progression  
Scales and Patterns 1-180

12 musical staves, each consisting of five horizontal lines. The staves are numbered 1 through 12. Each staff contains a bass clef, a key signature, and a sequence of notes (triads) connected by vertical bar lines. The notes are represented by stems and small circles, with some having horizontal dashes or dots.

## Master Chords

Ditone Progression  
Scales and Patterns 181-391

12 musical staves, each consisting of five horizontal lines. The staves are numbered 1 through 12. Each staff contains a bass clef, a key signature, and a sequence of notes (triads) connected by vertical bar lines. The notes are represented by stems and small circles, with some having horizontal dashes or dots.

## Master Chords

Sesquitone Progression  
Scales and Patterns 392-568

12 musical staves, each consisting of five horizontal lines. The staves are numbered 1 through 12. Each staff contains a bass clef, a key signature, and a sequence of notes (triads) connected by vertical bar lines. The notes are represented by stems and small circles, with some having horizontal dashes or dots.