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THE ROLE OF THE SECONDARY DOMINANT IN THE SOLO
WORKS FOR PIANO BY BRAHMS AND DVORÁK

THESIS

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INTRODUCTION

The harmonic practices of the late romantic period are often discussed in general terms, categorical phrases, and a score of subjectivisms characteristic of the era. It is the purpose of this thesis to clarify certain aspects of the harmonic vocabulary which developed in the late romantic period. The solo works for piano of Johannes Brahms were selected for analysis because of the piano's harmonic self-sufficiency of expression, the invariable factors such as color, the tempered scale, and the tendency of pianist-composers to express themselves characteristically at the piano. Classical forms such as the symphony tended to be harmonically conservative in comparison to the shorter piano pieces. The solo works for piano of Antonín Dvořák, which are harmonically and chronologically parallel in many respects, are little known. These works will be listed by date of composition in the Appendix according to the Antonín Dvořák Thematic Catalogue compiled by Jarmil Burghauser.¹ The piano works, Furiants (1878), Op. 42; Album Leaves (1880); Moderato in A Major (1881); Question (1888), are presently being prepared for publication

¹Jarmil Burghauser, Antonín Dvořák Thematisches Verzeichnis (Prague, 1960).

in the Works of Antonín Dvořák.² Two Little Pearls (1887) which has been published was not available at the time of this study. The Brahms works will be listed according to opus number followed by the works without opus number.

The terminology of harmonic analysis in this study will be that of Robert W. Ottman in Elementary Harmony: Theory and Practice and Advanced Harmony: Theory and Practice.³ For the sake of completeness, other systems and terminologies will be discussed in Chapter I as will any other methods which are necessary to identify and express the practices of Brahms and Dvořák in their solo works for piano. All tables of secondary dominant chord usages, as well as the lists of the composers' works, appear in the Appendix. With the exception of the secondary dominant major-minor seventh chords built on tonic and sub-dominant, which alter the stability of the original tonic key, both the secondary dominant triad and the major-minor seventh chord built on the same root are classified as a single category in the statistical data. The classification in the tables of the I⁻⁷ chord represents its use in both major and minor keys due to the relative infrequent use of the tonic major-minor seventh chord in a minor key. Because the IV chord can be major in both major

²Werke Antonín Dvořáks (Prague, 1955) Nach Originalquellen zum Druck vorbereitet von der Kommission für die Herausgabe der Werke Antonin Dvoraks: Otakar Šourek, Vorsitzender; Jan Hanus, leitender Radakteur, et al.

³Robert W. Ottman, Elementary Harmony: Theory and Practice and Advanced Harmony: Theory and Practice (Englewood Cliffs, 1961).

and minor keys, the classification in the tables is IV⁷ indicating a major-minor seventh chord built on the fourth degree of a major or minor key. Major chords built on the leading tone, raised sixth, and raised third degrees of a minor key are not given specific chord symbols in the Ottman system; also the major chord built on the raised fourth degree of both major and minor keys is not given chord symbol. A sharp sign in parentheses will represent major chords built on these raised degrees of the minor mode, e.g., C Minor, (#)VI is A C# E and (#)IV is F# A# C#. Any significant chord in a progression which does not contain a third will appear with the presumed analysis with any other possibility in parentheses, e.g., C Major, B-F# is VII(vii).

It is to be understood that modulation was made during the harmonic analysis where deemed necessary. All harmonic sequences involving secondary dominant chords were not considered in the tabulation of chord usages in order that unusual chord progressions contained within a harmonic sequence would not affect the statistical data.

CHAPTER I

THE ROLE OF THE SECONDARY DOMINANT

The dominant and non-dominant relationships of secondary dominants are the subject of this study. The function of a secondary dominant is that of a chord in dominant or fifth relationship to any following major, minor or diminished chord. Less commonly, when a secondary dominant is used without the fifth relationship, it assumes its normal relationship within a progression.¹ Ottman calls these progressions variations on the basic progression. The progression I III⁷ IV is basically the normal progression I iii IV. Figure 1 illustrates how a secondary dominant may be used within its normal progression.

The musical score for Brahms' Capriccio Op. 76, No. 8, measures 49-50, is presented in a piano accompaniment format. The key signature is C major. The score shows a progression of chords: V⁷, ii^{II}, I, III, and IV. The secondary dominant III is marked with an asterisk. The score includes measure numbers 48, 49, and 50, and various musical notations such as accidentals and dynamics.

Fig. 1--Brahms, Capriccio Op. 76, No. 8 meas. 49-50

¹Ottman, Advanced Harmony, p. 125.

Secondary dominants are often considered as altered chords. However, not all of the secondary dominants, for example, the IV⁷, VII, and VI chords in a minor key, are altered chords. These plus the Neapolitan sixth chord in both major and minor modes and the bVI and bVII in a major key are included in this study.

In a sense, chromatic alteration of the secondary dominant may be thought of as a continuation of musica ficta, as the result of chromatic development and evolution of harmony. Further development of cadential patterns led to the concept of modulation and secondary tonal centers. The derivation of secondary dominants is mentioned in Arnold Schoenberg's Theory of Harmony.

Secondary dominants were derived from the dominants on the old church modes, producing leading-tones for the modal scales.²

Peter Wishart briefly mentions the practice of musica ficta in a discussion of transitory modulation.

Nearly all transitory modulation is an extension of the principle of chromatically altered passing and harmonic notes which colour the minor pauses of the passage concerned a little more strongly. In fact, transitory modulation is really an extension of sixteenth-century musica ficta practice.³

Transitory modulation will be discussed later in this chapter.

²Arnold Schoenberg, Theory of Harmony (New York, 1948), p. 124.

³Peter Wishart, Harmony, A Study of the Practice of the Great Masters (London, 1956), pp. 66-67.

Early in the history of harmonic development, emphasis was placed on the diatonic chords to which secondary dominants resolved. With the extension of tonality in the nineteenth century and the addition of chords borrowed from the minor mode, these secondary dominant chords began more frequently to assume a function independent of the fifth relationship which was considered to be a normal resolution. These secondary dominants began to substitute for their resolutions by implying the resolution without actually sounding it. This changed the scope of motion within a key to a greater movement between secondary tonalities. The increased movement between tonal centers and the frequency of more remote modulations lessened the significance of the fifth relationship.

This brought the tonic of the remote key into close temporal relationship with the tonic of the principal tonality, and soon it was no longer necessary for it to be preceded by its dominant. At this point it became a member of the original tonality. It was thus necessary for many of these chords to complete a tonal cycle before they could make the change from altered to added chords. This is especially true of chords which stood in third relationship to the principal tonic. The major triad on the submediant was an altered chord, dominant type, in the eighteenth century, and existed diatonically as a tonic in rare cases of their relationship between movements⁴

The emancipation of dominant and diminished chords resulted in their harmonic independence. The eventual excess of dominant-type seventh chords and the tritone tension

⁴Charles Kent, "Tonal Expansion in the Early Romantic Period," unpublished doctoral dissertation, Eastman School of Music, University of Rochester, Rochester, New York, 1914, pp. 323-324.

tended to dull the senses, and the need for resolution was no longer felt.

The ear had gradually become acquainted with a great number of dissonances, and so had lost the fear of their "sense-interrupting" effect. One no longer expected preparations of Wagner's dissonances or resolutions of Strauss' discords; one was not disturbed by Debussy's non-functional harmonies, or by the harsh counterpoint of later composers. This state of affairs led to a freer use of dissonances comparable to classic composers' treatment of diminished seventh chords, which could precede and follow any other harmony, consonant or dissonant, as if there were no dissonance at all.⁵

The practices of the nineteenth century saw a skillful handling of chords transferred from the minor mode to the major mode. This transference of borrowed chords from the minor mode to the major mode is not to be interpreted as a change of mode, but will be referred to in this study as the assimilation of the major-minor mode. Change of mode will refer to the process by which one or more members of a diatonic triad are altered or transformed, for example, the Neapolitan sixth in a major key which must be formed by a double change of mode.

Change of mode opened up new key regions formerly considered foreign to the principal key. The predilection of romantic composers for remote relationships is evidenced by the frequency of progression to chords and keys a tritone or a third away from the original key.

⁵Arnold Schoenberg, Style and Idea (New York, 1950), p. 104.

In Schoenberg's Structural Functions of Harmony, the concept of extended tonality enlarges the possibilities of related keys or "regions," thereby altering the concept of remote modulation.⁶ In a chapter entitled "Interchangeability of Major and Minor," Schoenberg discusses change of mode and acknowledges keys previously considered remote to be related (however indirectly it may be) through the interchangeability of major and minor modes.

. . . In the eighteenth century the major and minor systems consisted of seven diatonic triads. Other triads (and seventh chords) were altered chords in this system and direct modulation to the keys represented by these altered chords was rare. In the Romantic period, however, increased emphasis was placed on these chords as tonics of satellite tonalities, and modulation to these "remote" keys was eventually made directly, without recourse to change of mode of the original key or successive closely related modulations.⁷

The use of a tonic change of mode is perhaps older than is ordinarily assumed. Wishart makes interesting comments on the use of change of mode in Baroque music.

In most Baroque music the modulations are only transitory and therefore the change in the quality of triads is managed more in the nature of changes of accidentals in the main key. Also what often look like "alterations of quality" modulations are not modulations at all but expressive coloring of various tonic key harmonies.

Note that the quality alteration has modulatory power for the same basic reason as the tritone chord.

⁶Arnold Schoenberg, Structural Functions of Harmony (New York, 1954), pp. 19, 76-77.

⁷Kent, "Tonal Expansion," p. 323.

It is or can be ambiguous. For instance, the changes from a tonic minor chord to a tonic major may mean merely a new aspect of the same tonic; or it may mean a progression or modulation to the darker subdominant . . . In general, it may be said that this particular modulation (tonic minor-major-subdominant) is used as a short-range one because it obviously leads back to the tonic quickly, acting as a plagal finishing cadence.⁸

Kent recognizes the duality of the major and minor systems.

Along with the major tonality a mixed type of tonality evolved which contained a minor third scale step; this scale step required a minor sixth scale step (to avoid the tritone). But the sixth scale step formed a tritone with the second; the latter was consequently frequently lowered, producing the so-called "Neapolitan" relationships. This lowered second scale step, however, now formed a tritone with the dominant; the latter could not be lowered (for it would then form a tritone with the tonic itself), so that the second scale step, and to a certain extent the sixth, became points of compromise.⁹

Terminology variants of secondary dominants vary widely. A generally accepted definition of a secondary dominant is a major triad or a major-minor seventh chord which functions as a dominant of degrees other than tonic. Other terms used to designate such chords are, for example, second dominants,¹⁰ dominant embellishments,¹¹ applied dominants,¹² artificial

⁸Wishart, Harmony, p. 60.

⁹Kent, "Tonal Expansion," pp. 5-6.

¹⁰Arthur Olaf Anderson, The Second Forty Lessons in Harmony (Boston, 1923), p. 1.

¹¹George A. Wedge, Applied Harmony (New York, 1939), I, 1.

¹²Felix Salzer, Structural Hearing, Tonal Coherence in Music (New York, 1952), I, 18.

dominants,¹³ and dominant formations.¹⁴ Walter Piston says, "these temporary dominant chords have been referred to by theorists as attendant chords, parenthesis chords, borrowed chords, etc."¹⁵ According to Schoenberg,

a secondary dominant on the second degree has the name Changing Dominant . . . Its function is to replace the ordinary ii in the cadence;-- usually, in this manner, that the chord succession is II-I₄⁶-V-I; however the changing dominant is often followed directly by V-I.¹⁶

A secondary dominant's primary function is a coloristic one (See Fig. 2, p. 11). The use of secondary dominant chords, which temporarily exposes relative key colors, greatly enriches the diatonic harmonic vocabulary. Secondary dominants give aural color and vividness to chordal progressions, the amount of color depending on the degree of chromaticism. Such harmonizations often help to define the original chords. Piston remarks that there is a

tendency of composers to prefer the sound of dominant harmony to that of nondominant function . . . The procedure gave harmonic color by the addition of new notes and increased the sense of direction and movement in the harmony. In its extreme form it produced a harmonic scheme in which each chord became the dominant of the next.¹⁷

¹³Schoenberg, Structural Functions of Harmony, p. 16.

¹⁴H. Owen Reed, Basic Music (New York, 1954), p. 112.

¹⁵Walter Piston, Harmony (New York, 1941), p. 151.

¹⁶Schoenberg, Theory of Harmony, p. 128.

¹⁷Piston, Harmony, p. 150.

in tempo

33 *p* 34 *f* *dim.* 35 *p* 36

EM: I II V V+ I7 IV IV+ bVII bIII #IV I6

Fig. 2--Dvořák, Humoresque Op. 101, No. 3 meas. 33-36

Secondary dominants create fifth relationships and dominant leading-tone harmonies in addition to the diatonic dominant-tonic relationship in the key. Many writers state that such additional relationships strengthen the tonal structure.

Far from weakening the tonality, the secondary dominants can be a distinct aid in strengthening it. If we imagine a tonal center, supported on either hand by subdominant and dominant, it is easy to see that if these two important tonal degrees are in turn supported by their respective dominants the whole tonal edifice is made stronger thereby.¹⁸

The alterations which produce secondary dominant chords . . . have of course the effect of strengthening the sense of root progression.¹⁹

This dominant [secondary] serves one purpose only--to enrich and strengthen the chord that follows by the harmonic emphasis of its fifth relationship . . . The function of the applied dominant can be compared with the use of an adjective before a noun.²⁰

¹⁸Ibid., p. 151.

¹⁹Roger Sessions, Harmonic Practice (New York, 1951), p. 334.

²⁰Adele T. Katz, Challenge to Musical Tradition (New York, 1945), p. 4.

Figure 3 demonstrates the fifth relationship created by the use of a secondary dominant.

AM: I IV VI⁷ ii III ii #IV^{d7} V⁷ I

Fig. 3--Dvořák, Waltz Op. 54, No. 1 meas. 35-38

Although the statements above emphasize one side of the picture, it may be pointed out that an excess of secondary dominants could very easily weaken tonality and obscure the key feeling. The need for supports may indicate a weakness in the basic architecture of a composition.

The secondary dominant may also be regarded as having varying degrees of intensity. Katz recognizes "three different degrees of emphasis": root position, first inversion and second inversion. In certain harmonic contexts, the use of the secondary dominant approaches that of a musical cliché. The most successful composers ingeniously disguise the secondary dominant by its surroundings, its rhythm, and its use in inversion. Figure 4 is an example of the effectiveness of a secondary dominant in inversion and the motion created thereby.

The image shows a musical score for Brahms' Rhapsody, Op. 79, No. 2, measures 1-8. The score is written for piano and includes various musical notations such as dynamics (f, m.f., f), articulation (legato, m.s.), and performance instructions (rit., a tempo). It features complex chord structures with figured bass notation (e.g., Gm(VI), Bm(VI), VII, IV, V, VI, VII, I, IV) and includes a 3/4 time signature at the end. The score is divided into three systems of staves.

Fig. 4--Brahms, Rhapsody Op. 79, No. 2 meas. 1-8

The harmonic impulse is always strongest when the chord is in root position. Next in the harmonic pressure it exerts, is when, in inversion, the third of the chord serves as a neighbor of the root of the succeeding chord in which it has the effect of a leading tone. Its weakest expression of harmonic influence occurs when it appears in inversion as a passing chord, since the contrapuntal function it assumes tends to offset its inherent harmonic impulse.²¹

Secondary dominants are very often found in quasi-modulation or transient modulation. The difficulty in analysis lies in frequent harmonic obscurity, the temporal and rhythmic element and the structural design in which the secondary dominants occur.

The use of applied dominant relationships greatly enriches the means of modulation. The difference between an applied dominant and a modulation is the difference between detail and general plan. Applied dominant chords take their place as minutiae in the broader relationships that establish a key.²²

Schoenberg was reluctant to discuss the role of secondary dominants in transient modulation. Schoenberg says,

. . . for it is false to distinguish different keys in so short a phrase . . . A triad can sometimes be treated as a key, but it confuses the picture, blurs the view of the whole and the coherence of its parts, if every triad preceded by a dominant is called a separate key.²³

In order to discuss fully the role of the secondary dominant

²¹Ibid., p. 32.

²²William J. Mitchell, Elementary Harmony (New York, 1939), p. 215.

²³Schoenberg, Theory of Harmony, p. 126.

in transient modulation, it will be necessary to define complete and transient modulation.

Ottman defines a transient modulation as a progression which suggests a modulation. "A modulation is a 'complete' modulation when the new key is established so firmly that there seems to be no necessity of leaving it immediately."²⁴ Another term used by several authors, transition, refers to transient modulation. However, there apparently is some confusion as to the meaning of the word transition, for transition and complete modulation are used interchangeably at times. Rimsky-Korsakov says that "all modulations may be sub-divided into transitions and digressions. A transition is a modulation where the subsequent key is established for a certain length of time."²⁵ According to Ottman, this corresponds to a "complete" modulation. "A digression is a modulation where the subsequent key is slightly touched . . . and is forthwith abandoned for the original key or a digression into one of the near keys."²⁶ The term digression probably corresponds to the majority of definitions of transient modulation. Anderson mentions the use of the secondary dominant with transition or transient modulation.

²⁴Ottman, Advanced Harmony, p. 5.

²⁵N. Rimsky-Korsakov, Practical Manual of Harmony (New York, 1930), p. 99.

²⁶Ibid.

When there is a momentary change of feeling, or shifting, of tonic to a triad other than the original tonic, the progression is called a transition. Such a progression does not actually establish a new key as would a longer and more definite progression of chords relative to the new tonic. It simply states a relative key color temporarily, returning immediately to chords of the original key relationship.²⁷

"Modulations are divided into two classes, those that are 'temporary' or 'false,' in which the new key is of transient occurrence, and those that are 'complete' and so of a more permanent nature."²⁸ Transition or transient modulation is sometimes called "false modulation." According to the Harvard Dictionary, a false modulation quickly returns to the initial key; a passing modulation progresses to a third key other than that of the original key. A passing modulation generally occurs in a sequential progression, sometimes called sequential modulation.²⁹ Piston says that "sometimes what seems to be a passing modulation is followed at once by a return to the original key. The term false modulation is applied to this procedure."³⁰

The temporal element is the significant factor in determining complete modulation. Sessions' definition of

²⁷Anderson, Forty Lessons, p. 1.

²⁸Salzer, Structural Hearing, I, 19.

²⁹Willi Apel, "Modulation," Harvard Dictionary of Music (Cambridge, 1958).

³⁰Piston, Harmony, p. 44.

complete modulation contains all the essential elements of a modulation.

The modulation will not be really complete until a rhythmic as well as a harmonic goal has been reached, and will not be convincing unless the melodic as well as the harmonic design is convincing in terms of the key of destination. Whether a given progression of chords constitutes a convincing modulation can be judged only in definite musical contexts in which more is involved than a mere change of harmony.³¹

Figure 5 illustrates a transient modulation, which returns immediately to B major.

Fig. 5--Brahms, Rhapsody Op. 79, No. 1 meas. 100-105

An important part of the role of the secondary dominant is its use in sequential patterns. Sequences may be either modulatory or non-modulatory (sometimes called a tonal sequence). Melodic sequences are often enriched through the interpolation of new intermediate harmonies. Figure 6, page 18, shows a modulatory sequence which employs the use of secondary dominants. It will be noted as mentioned earlier in the chapter, that the following example modulates a tritone away from the original tonic.

³¹Sessions, Harmonic Practice, p. 268.

This musical score consists of two staves, treble and bass clef, with a common time signature. The piece is in a key with two flats (B-flat and E-flat). The score is divided into measures 41 through 61. Measure 41 starts with a piano (*p*) dynamic and a *Com.* (Crescendo) marking. Measure 45 has a *pp* (pianissimo) dynamic. Measure 50 has a *pp* dynamic. Measure 55 has a *fz* (forzando) dynamic. Measure 60 has a *fz* dynamic. The score includes various chord diagrams labeled with Roman numerals (III, IV, V, VI, VII) and specific chord symbols (e.g., *bII*, *bIII*, *bIV*, *bV*, *bVI*, *bVII*, *bII*, *bIII*, *bIV*, *bV*, *bVI*, *bVII*, *bII*, *bIII*, *bIV*, *bV*, *bVI*, *bVII*). There are also markings for *Com. Vcl. 7* and *as A*. The notation includes notes, rests, and slurs.

Fig. 6--Dvořák, Poetic Tone-Pictures No. 10 meas. 41-61

The next aspect of the secondary dominant might be considered as being beyond the scope of this study as it encompasses such writers and theorists as Heinrich Schenker, Felix Salzer, who elaborated on the theories of Schenker, and Roger Sessions, who embodied many of the ideas of Schenker into his Harmonic Practice.

Harmonic prolongation may be viewed as part of the role of the secondary dominant, and it must be mentioned at this point that Schenker's theory does not allow "modulation" as such. The traditional concept acknowledges the possibility of many different tonalities within a composition, provided there is some form of tonal coherence or return to the principal key. The Schenker concept concedes of no modulation away from the main tonality. The role of the secondary dominant is expressed in his "indirect tonicalization" which "is effected when a scale-step, to satisfy its yearning for the value of a tonic, makes use of one or more preceding scale-steps."³²

Salzer and Sessions have made excellent interpretations of Schenker's theory, but within the concept of modulation. Schenker bases most of his theory upon a concept of linear propulsion emphasizing the contrapuntal significance of musical construction.

Closely related to the aural degrees of intensity of secondary dominants acknowledged by Katz is Salzer's

³²Heinrich Schenker, Harmony (Chicago, 1954), p. 261.

contrapuntal function of the secondary dominant.

Applied dominant chords, as we know, are harmonic-prolonging chords. Often, however, they have an even stronger contrapuntal significance . . . The harmonic character of an applied dominant is weakened by putting that chord in inversion . . . Applied dominants serve as passing chords. The contrapuntal function is so strong that one may speak of a chromatic-passing chord.³³

.
Whenever we are confronted with a series of applied dominants, in inversion forming a chromatic bass progression, these applied dominants tend to lose their harmonic significance and become part of a contrapuntal passing motion.³⁴

Harmonic prolongation is an enlargement of harmonic span which creates motional goals increasing the sense of direction and motion in music. Prolongations, according to Schenker and Salzer, do not impair the harmonic or tonal stability of a musical composition. Tonality or prolonged motion represents the single tonality of the composition which results from the structural progression. Schenker reduces all composition to a single basic progression which constitutes the structural framework of the whole work. "The other so-called keys and the 'modulation' are prolonged chords and prolonged progressions, all within the framework of that one tonality."³⁵

Sessions feels that the concept of modulation merges with that of "tonicization," a process by which "harmonies other than the tonic are given greater vividness or emphasis."³⁶

³³Salzer, Structural Hearing, I, 167.

³⁴Ibid., I, 169.

³⁵Ibid., I, 226-228.

³⁶Sessions, Harmonic Practice, p. 247.

Sessions places leading-tone chords in the same category as secondary dominants. In the process of tonicization, the secondary dominant chords and the secondary leading-tone chords prolong the harmonic span by giving each step in the progression the effect of a temporary tonic. The harmonic sense of the basic progression would remain the same provided the proper balance between diatonic harmonies and secondary harmonies was maintained.

In its simplest form this process consists in giving the harmony in question the temporary aspect of a tonic, thus strengthening it in its individual character and, so to speak, drawing it momentarily away from its place in the prevailing key, into a quasi-key of its own.

Though the process is not unlike modulation, it differs clearly from the latter in scope and function. Tonicization is essentially a matter of detail.³⁷

Figure 7 illustrates a basic progression in which the VI chord and its dominant are prolonged.

³⁷Ibid.

CHAPTER II

THE ROLE OF THE SECONDARY DOMINANT IN THE SOLO WORKS FOR PIANO BY BRAHMS AND DVOŘÁK

To preface a discussion of the use of the secondary dominant in the solo works for piano of Brahms and Dvořák, it is necessary to explain the use of the secondary dominant through the extension of the major-minor mode. The ambiguous nature of the upper tetrachord in the minor mode makes it dependent on the major mode and at once a complement of the major since, tonally speaking, the conditions of maintaining the tonality are exactly the same. In other words, the cadence formulae are the same in minor as in major, thus creating somewhat an artificiality in minor. Both Dorian and Aeolian qualities are apparent in the three forms of the minor scale: pure (Aeolian), melodic (Dorian major sixth), and harmonic (combination of major and Aeolian). By considering all of the chromatic elements of a combined major and minor, it is found that the possibilities for exchange between tonal regions and certain modal qualities are numerous. Figure 8 illustrates the directional progression of the secondary dominants under consideration in this study. Each chord in Figure 8, a potential dominant, can move according to the direction of the resolution, thus forming a hierarchy of directional movement by fifths.

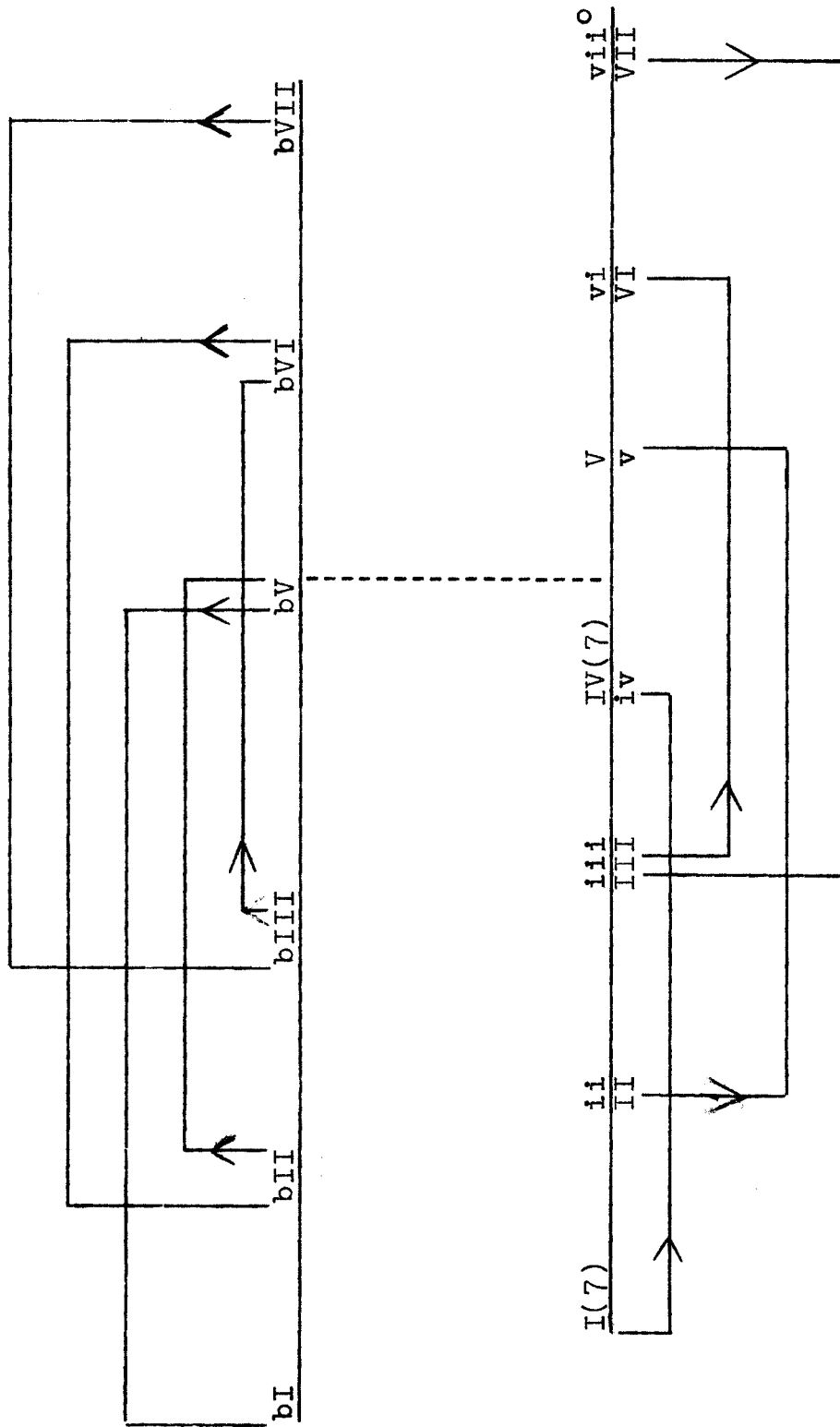


Fig. 8---Secondary dominants in the major-minor mode

All of the chords in Figure 8 are subject to change of mode, since a dominant, secondary or otherwise, can precede a major or a minor triad.¹ Likewise, change of mode may be an effective method of progressing from a secondary dominant to its parallel minor chord, e.g., I-II-ii-V. Figure 9 shows an example of this type of change of mode.

The image shows a musical score for Brahms' Intermezzo Op. 117, No. 3, measures 103-105. The score is in 3/4 time and D major. It features a piano part with chords and a vocal line. The tempo is marked "Più lento." and "rit. molto ed egualmente". The piano part includes chord symbols: Cm: #, #V/d, 2nd II, and #10-3. The vocal line includes the instruction "rit. molto ed egualmente".

Fig. 9--Brahms, Intermezzo Op. 117, No. 3 meas. 103-105

The tables found in the Appendix are tabulations of secondary dominants usages in both dominant and non-dominant capacities, i.e., secondary dominants used with and without the normal fifth relationship following.

The Brahms Capriccio Op. 116, No. 7 has an example of a secondary dominant (meas. 33) without its normal fifth

¹It should be noted that the symbols of certain secondary dominants differ from major to minor keys. For example, the progression bIII-bVI in a major key will be III-VI in a minor key, the progression IV⁷-bVII in a major key will be IV⁷-VII in a minor key, and bVI-bII in a major key will be VI-bII in a minor key and very often it happens that the same chord spellings have different chord symbols because of a sectional change of mode on tonic.

resolution which is used as an embellishment or an appoggiatura chord.

measures	31	32	33	34
	bm: i V	vii ^{d7}	ii III ii	vi ^o =
			am: vii ^o	bII vii ^o

Fig. 10--Brahms, Capriccio Op. 116, No. 7 meas. 31-34

The tables of chord usages of Brahms and Dvořák indicate not only chords used in the conventional sense, i.e., a regular secondary dominant progression followed by its temporary tonic, or secondary dominants that are "once removed chromatically,"² but an increased use of the extension of the principle of the secondary dominant (two or more secondary dominants used in succession) e.g., I-bII-bV-bI-bV-bII-V-I.

Secondary Dominant Usages

In the music analyzed, Brahms employed the secondary dominant in both dominant and non-dominant relationships more frequently than Dvořák. The following figures are the

²To clarify conventional and unconventional usages, it should be pointed out that II(d f# a) in the key of C is chromatically altered once from its original form of a minor triad (d f a) in a major key. The bII(bD F bA) is altered chromatically twice.

percentages of the total number (581)³ of the chords under consideration in this study found in Dvořák: I⁻⁷(21.5%), II(15.14%), bII(8.43%), III(9.63%), bIII(10.84%), IV⁷(1.7%), bV(1.03%), VI(6.8%), bVI(17.21%), VII(1.37%), and bVII(6.19%). The following figures are the percentages of the total number (2152) of the chords under consideration found in Brahms: I⁻⁷(19.37%), II(18.54%), bII(10.4%), III(13.8%), bIII(2.41%), IV⁷(3.02%), bV(2.74%), VI(11.8%), bVI(3.02%), VII(11.19%), bVII(2.69%), (#)IV⁷(.092%), (#)VI(.013%), and (#)VII(.74%).⁴

A few chords occurred so infrequently as to have been merely curiosities but served to illustrate the extent to which remote harmonic progression was carried. The (#)IV⁷ was preceded by a minor tonic and followed by the dominant chord. The (#)VI was preceded by III, #vi^{o7}, and II, and followed by IV, v, and ii. The (#)VII was preceded by I, iii, V, #iv^{d7}, vi, III, and IV, and was followed by vii, iii, bII⁷, V, and III.

There are certain chords not normally thought of as secondary dominants which may be considered to have been used frequently enough to have become secondary dominants.

³The total chord count in Dvořák was affected by the frequent use of the secondary dominant in harmonic sequences, which, as stated in the Introduction, were excluded from the tabulations. It is also interesting to observe that Dvořák very often made exact sequences whereas Brahms almost invariably changed the compositional construction of a harmonic sequence.

⁴The mere fact that such chords as (#)VII and (#)VI were found in Brahms points out the latitude with which chords were employed and then resolved.

In Dvořák the bIII chord and its progression to bVI may be regarded as having become a secondary dominant progression. This statement takes into consideration that bIII-bVI(51.61%)⁵ has sufficiently high percentage to justify its status as a secondary dominant progression, but the reverse, bVI-bIII (48.42%), is an indication of the frequency of progression between secondary dominant (bIII) and its harmonic goal (bVI), e.g., I-bIII-bVI-bIII-I. In the instance of the bVI chord, the percentiles indicated that bVI most frequently progressed back to bIII in both Brahms (48.42%) and Dvořák (14.75%) more than the bVI progressed to its harmonic goal as a secondary dominant (bII).

In Brahms the progressions bII-bV(21.07%) and bV-bII (69.49%), bIII-bVI(22.44%) and bVI-bIII(14.75%), VI-bII(13.3%) and bII-VI(6.72%), VII-III(46.63%) and III-VII(12.17%), and bVII-bIII(22.41%) and bIII-bVII(18.36%) may be also considered to have become secondary dominant progressions owing to the relatively high percentages of these chords. The bV chord progressed back to bII more than the bV progressed to its harmonic goal as a secondary dominant (bI). It is interesting to note that in Brahms the percentile of bII-bV(21.07%) is higher than bII-V(19.28%) and the corresponding percentile of bII-bV in Dvořák was considerably less (3.22%).

⁵The numbers in parentheses indicate frequency of use (in percentage) of the chord progression when compared with the total frequency of the first chord of the progression.

The most noticeable directional traits of the resolutions of secondary dominants (other than the normal fifth relationship) were those secondary dominants which progressed up by whole or half-step or down by whole or half-step. Other secondary dominant resolutions were followed by different chord-types built on the same degree of the scale (change of mode). The statistics indicate a small frequency between secondary dominants and chords in some form of third relationship up. Discussion of these traits appear in the following sections.

Dvořák

With the exception of a few isolated instances, most of the chord tabulations of secondary dominant usages in Dvořák were conventional.⁶ The common progressions with common chords having the largest percentiles were: I⁻⁷-IV(44.71%), II-V(59.09%), III-vi(36.5%), VI-ii(32.5%), VI-II(25.0%), and I⁻⁷-iv(28.45%). Common progressions with less common chords were: bVI-bII(7.36%), bIII-bVI(51.61%), and III-VI(11.11%). The less common progressions were: VII-III(12.5%) and IV⁷-bVII(12.5%). The bII chord still progressed most frequently

⁶The secondary dominant progressions found in this survey are categorized in the following manner in order that references to common or conventional progressions and unusual progressions may be clarified: common progressions with common chords (I-II-V, I-VI-ii, I-III-vi, i-III-VI, I-VI-II, I⁻⁷-IV [major and minor]); common progressions with less common chords (I-bVI-bII, I-bIII-bVI, I-III-VI, i-I-IV); and less common progressions (bII-bV, VII-III, IV⁷-VII, IV⁷-bVII, bV-bI, bVII-bIII).

to the V chord in the manner of the traditional Neapolitan sixth chord usage.

Secondary dominants, used in non-dominant capacities, progressing down by half-step or whole-step with relatively high percentages were: II(10.22%), bII(17.75%), III(15.85%), and bV(10.0%). Significant percentages of secondary dominants progressing up by half-step or whole-step were: bV(10.0%) and VII(25.0%). There was a variety of secondary dominants bearing high percentages affected by change of mode in Dvořák: II(11.35%), IV⁷(37.5%), bV(20.0%), VI(12.5%) and VII(12.5%). (See Table X for chord-types used as resolutions.) Apparently the II chord and the VI chord in Dvořák, when not used as secondary dominants were resolved by change of mode. In comparing the chords affected by change of mode and the secondary dominants progressing up by half-step or whole-step, it was noted that the bV was more often affected by change of mode than it was resolved up by half-step or whole-step and in reverse, the VII progressed up by half-step or whole-step more often than it was affected by change of mode. Secondary dominants progressing up by third with relatively high percentages were: bII(11.28%), bVI(18.94%), and VII(37.5%). The bV with the highest percentage (40.0%) progressed to VII which could be interpreted as bV to bI (fifth relationship), bV to VII (third relationship) or (#)IV to VII (fifth relationship). (For other percentages see Tables IX through XII.)

Brahms

The statistical data for Brahms indicated in general that although there were many instances of conventional resolutions of the secondary dominant, there was a marked increase in the use of the less common chords with less common resolutions, and the secondary dominant, in its non-dominant capacity, progressed boldly in any direction with a great deal of latitude as the quality of the chord of resolution.

The common progressions with common chords having the largest percentages were: I^{-7} -IV(41.5%) and II-V(54.13%). Common progressions with less common chords were: III-VI (17.1%), and bIII-bVI(22.44%). The less common progressions were: VII-III(46.63%), bVII-bIII(22.41%), VI-bII(13.3%), bVI-bII(11.47%), IV^7 -VII(35.59%), and bII-bV(21.07%).

There was a rather unusual number of secondary dominants which progressed down by half-step or whole-step having outstanding percentages: II(18.06%), bII(18.82%), III(15.42%), bIII(20.36%), IV^7 (10.16%), VI(12.1%), and bVI(16.37%). Secondary dominants with significantly high percentages progressing up by half-step or whole-step were: I^{-7} (13.57%), III(13.46%), VI(10.86%), and VII(11.76%). Secondary dominants progressing up by third with relatively high percentages were: bIII(12.24%), VI(9.65%), and bVII(10.32%).

The chords most affected by change of mode were the IV^7 (23.7%), bV(10.16%), and the bVII(11.06%). These chords,

most likely to endanger the principal tonality because of their relative position to tonic, were negated by progressing to some other spelling of the same chord. Note that the bVII, instead of the VII as in Dvořák, was affected by change of mode. This could have a variety of meanings. First, the bVII in Dvořák most often progressed to bIII as a secondary dominant progression. Secondly, the VII (minor key) in Dvořák did not assert itself too frequently as a secondary dominant. Dvořák was less inclined to use a secondary dominant in non-dominant capacity, i.e., resolve a secondary dominant up by step. There are no chords in common between the chords affected by change of mode and chords progressing up by half-step or whole-step in Brahms.

Modality

In order to exhaust the possibilities of secondary dominant usages and related areas, this section is devoted to a discussion of certain aspects of modality in the major-minor system as expanded by the use of the half-step and the extension of the principle of the secondary dominant.

The thorough exploitation of the major-minor scales and modulation in the nineteenth century led to the present harmonic use of diatonic modes other than major and minor. This manifestation was not a restoration, but simply another facet of a scale system.

The music of the late romantic period reveals an under-current of modality which finally manifests itself fully in

the twentieth century. The revival of the modes has grossly extended the harmonic and melodic possibilities of tonal composition. The emergence of the modes in present day composition, often referred to as "neo-modality," could be considered as a development or an outgrowth of the late romantic period which exists under the surface of conventional harmony. John Vincent⁷ recognizes three sources which tended to keep alive this modality: folksong, textbooks, and the church. Vincent attributes the famous Gradus ad Parnassum by Joseph Fux⁸ as being instrumental in the preservation of the diatonic modes. Since this textbook is a reversion to the practices and teaching methods of the sixteenth century, he maintains that the book dominated musical education and was influential for a century and a half as it was used by such composers as Haydn, Mozart, and Beethoven in their studies.

There have been references to the many-sided subject of the harmonic practices of the nineteenth century as a return

⁷John Vincent, The Diatonic Modes in Modern Music (New York, 1951), pp. 200-201.

⁸Ibid., p. 201. Vincent also mentions the following: J. F. Lesueur, Exposé d'une Musique, une imitative et particulière à chaque solennité, Paris, Chez la Veuve Herissant, 1787; William Crotch, Elements of Musical Composition Comprehending the Rules of Thorough-Bass, second edition, London, Longman, Rees, Orme, Brown, Green and Longman, 1833; Louis Niedermeyer, Gregorian Accompaniment, translation by Wallace Goodrich, Novello (New York, Ewer and Company, 1905); S. W. Dehn, Theoretisch-praktische Harmonielehre mit angefügten Generalbassbeispielen, Schlesinger'sche Buch- und Musikalienhandlung, Berlin, 1890.

to modality rather than considering the possibility of the harmonic technique of the late romantic era combining the major-minor mode and the elements of the earlier modal system, e.g., the Phrygian mode.

Our two main tonalities, major and minor, derive historically from the church modes. The contents of the three major-like modes--Ionian, Lydian, and Mixolydian--are concentrated in the one major tonality, and the contents of the three minor-like modes--Dorian, Phrygian, and Aeolian--in the same manner, are concentrated in the minor.⁹

Half-Step

The frequent use of the Neapolitan sixth chord in close relationship with the tonic chord (the half-step of the Phrygian mode) is one of the important factors linking the major-minor mode and the Phrygian mode, e.g., in Dvořák, the bII was preceded by a minor tonic 40.8 per cent and in Brahms, the bII was preceded by a minor tonic 14.28 per cent. This might possibly indicate that when the key was minor the bII was more readily incorporated into the minor key because of the whole step between bII and III. In a major key there would be an interval of an augmented second between bII and III. The major and minor scales combined with the element of the Phrygian half-step and the Neapolitan sixth chord facilitate the means for reaching the "lowered" chord relationships or chords on the "flat-side" of the major-minor mode, i.e., I-bII-bIII-IV-bV-bVI-bVII.

⁹Schoenberg, Structural Functions, p. 9.

It must be mentioned at this point that the frequent use of the progression V-bVI or a melodic emphasis of the fifth degree progressing to the lowered sixth degree can be identified as the characteristic half-step flavor of the Phrygian mode. Because of the temporal element involved at times, the function of the dominant is weakened and any directional sense lost, making the progression appear more remote than it is actually. Thus the effect of bII has been implied due to the fact that the aural perception, i.e., mental recognition, of the key structure is obscured and the

The image shows a handwritten musical score for Brahms' Rhapsody Op. 79, No. 1, measures 60-66. The score is written on two systems of staves. The first system (measures 60-65) shows a progression from a dominant chord (V7) to a lowered sixth degree (bVI) and back to the dominant (V7). The second system (measures 65-66) shows a progression from a lowered sixth degree (bVI) to a lowered second degree (bII) and back to the dominant (V7). The score includes dynamic markings (ff, f, fz), articulation (accents), and fingering (1, 2, 3, 4).

Fig. 11--Brahms, Rhapsody Op. 79, No. 1 meas. 60-66

directional significance of the fifth lost. In Brahms' Rhapsody Op. 79, No.1, the abrupt change in the compositional style is one of the factors helping to create the effect of the Phrygian mode or of the bII chord. The change of thematic content to a scale-wise passage and the dynamic level emphasize this harmonic progression.

A similar situation occurs in the Brahms Intermezzo Op. 119 No. 2 measures 16-19. This example contains a half-step between G and Ab in measure 17. The spelling of the chord containing the Ab could be interpreted as an f minor triad or an Ab major triad because of the missing chord member. The entire section from measures 16 to 19 is analyzed as remaining in the key of e minor because the digression in measure 18 appears to be too short to be considered as a modulation. However, two alternate analyses are possible. If the major-minor seventh sound of the gbdf chord in measure 17 is considered to be a modulation to

16 17 pp 18

Em: i bII⁷ VII VII^o III⁷ bii VI⁷ bii

Fig. 12--Brahms, Intermezzo Op. 119, No. 2 meas. 16-18

C Major, then the progression is V^7 to bVI or V^7 to iv (depending on whether the chord is spelled $Ab C Eb$ or $f ab c$). Measures 18-19 could also be considered a digression to f minor. It is also conceivable to analyze measure 17 as a modulation to G Major with the progression I^{-7} to bII . Regardless of the analysis, the predominant point of interest in this example is the half-step from G to Ab .

Neapolitan Sixth Chord

The use of the Neapolitan sixth as a temporary tonic of bVI or VI in Brahms occurred often enough to be given consideration in this study: $VI-bII$, (13.3%) and $bVI-bII$, (11.47%). In Dvořák the percentiles were: $VI-bII$, (12.5%) and $bVI-bII$, (7.36%). These two chords, bVI and bII , being pivotal points between the original tonic and dominant, are both only a half-step away from the structural pillars of the tonality. Figures 13 and 14 show examples of the bVI to bII progression.

DM: VI V VI IV =

Bm: VI V 17 IV V bVI bII V

Fig. 13--Brahms, Edward Ballade Op. 10, No. 4 meas. 130-134

Fig. 14--Dvořák, Poetic Tone-Pictures Op. 85, No. 11 meas. 52-58

Tritone Relationship

Continuing the principle of extension as seen in the bVI - bII progression, the Neapolitan sixth chord can become a secondary dominant of bV , which establishes a tritone relationship between bV (the harmonic goal of bII) and the original tonic. To introduce convincingly the Neapolitan sixth as a secondary dominant to bV may endanger the principal tonality. By excessive emphasis, bII - bV may become II - V of the key of the leading-tone which creates a Neapolitan relationship with the overpowered principal key. This, quite obviously, might weaken the tonality if used excessively. An abrupt example of the tritone relationship is found in

Figure 15 in which there is no attempt to soften the relationship by elaborate figuration or complex linear writing. This example shows clearly how the tritone can be employed without endangering the principal tonality. It also illustrates the half-step relationship between bI and I . The progression bV to bI may be considered a further step in the extension of the principle of the secondary dominant.

The musical score for Figure 15 consists of two staves (treble and bass clef) in B-flat major. The key signature is Bbm. The score covers measures 99 to 103. Measure 99 starts with a piano (*pp*) dynamic. Measure 100 is marked with a tempo of 100. Measure 101 includes a *ritard.* marking and a *dimin.* dynamic. Measure 102 is marked with a tempo of 102. Measure 103 is marked with a tempo of 103 and a *fp* dynamic. The structural progression indicated below the staves is: $B^b m.:$ i bII bV bI VI° VII IV V^7 i .

Fig. 15--Dvořák, Humoresque Op. 101, No. 8 meas. 99-103

Figure 16 (See page 40) shows an example of another tritone relationship. In this and similar figures the progression above the line is the structural progression indicating the relationship of the various chord roots in f minor; the same progression is found analyzed with modulations below the line. Note, on the structural progression level above the line, the bII in relation to f minor and B major. Figure 17 is a similar harmonic situation found in the Dvořák Souvenirs No. 3 having both Neapolitan and bV relationships.

measures	20	21	22	23	24	25	26	27	28	33
fm	i	bVII ⁷	III ⁷	VI bVII ⁷	III	bII	bV ⁷ VII	bV ⁷ VII bII ⁷	bV ⁷ V ⁷	
fm	i	bVII ⁷	=	I ⁷ IV V ⁷	I	bVII =	I ⁷ IV =	I ⁷ IV V ⁷	I ⁷ bII ⁷ =	
A	bM :V ⁷				(Cb)	BM:V			fm :V ⁷	VI ⁷ #iv

Fig. 16--Brahms, Intermezzo Op. 118, No. 4 meas. 20-35

measures	9	10	11	14	15	16	17	21
FM:	V #iv It	bII bIII+ bVI	bIII ⁶ ₄	bIII ⁶ ₄	#iii° #IV VII ⁷	III ⁷ VI ⁷ II ⁷	(#i It) #vii It bII bII ⁷	
FM:	V #iv It =		II+ V ⁷	I ⁶ ₄ = I ⁶ ₄				
	Gbm:V ⁷	I ⁶ ₄	BM:V ⁶ ₄		vii° I IV ⁷	VII ⁷ III ⁷ VI ⁷	#iv It	V ⁷

measures	21	22	23	24
FM:	bV ⁷ VII ⁷	III ⁷ VI ⁷ II ⁷	V ⁷	I
BM:	I ⁷ IV ⁷	VII ⁷ III ⁷ VI ⁷ bII ⁷ =	FM:V ⁷	I

Fig. 17--Dvořák, Souvenirs No. 3 meas. 8-24

Figure 18 and Figure 19 (See page 43) illustrate tritone key structures. Figure 18 shows graphically the relationship between keys in the Dvořák Poetic Tone-Pictures Op. 85, No. 12. Each brace indicates the relationship of a tritone.

The Brahms Intermezzo Op. 117, No. 2 (Figure 20) utilizes unusual sequences of secondary dominants as well as having a different use of the Neapolitan sixth chord on the structural key level. The Intermezzo as a whole displays a structural relationship of keys as follows: $i \ v \ III \ i \ III \ i \ bII \ i$. Figure 20 represents the progression of the last three symbols ($i \ bII \ i$) of this structural relationship as indicated by the arrows in Figure 19 (keys: Bb, Cb, Bb).

Thus, through the half-step and the tritone relationship, it is evident that the secondary dominant is employed in progressions more complex than in the common and conventional concepts of the secondary dominant. These relationships are a part of the assimilation of certain aspects of the modes within the major-minor mode. It has been the object of this study to define these characteristics as well as present the secondary dominant in its traditional role within the solo works for piano of Brahms and Dvořák.

measures	19	20	21	22	23	27	28	29	30
CM:	V7	I+ bII7	bIII7	bVI bVII7	bV bVII7	#iiiG7	IV	#ivG7	II7 V
CM:	V	I bII7	=	vi II I ₄ ⁶ V7	I #viG7	VII	GM: #viiG7 V7	#iG7 =	I=
		GbM :V7							CM: V

Fig. 18--Dvořák, Poetic Tone-Pictures Op. 85, No. 9 meas. 19-30

measures	1	4	5	9	13	18	21	25	31	46	52
CM:	Fm-	-Em-	-AbM-	-cm-	-Gb=F#M-	-EM-	-Abm-	-AbM-	-EbM-	-AM-	-EM

measures	58	60	63	70	74
CM:	am-	-Ebm-	-gm-	-DbM-	-Fm

Fig. 19--Dvořák, Poetic Tone-Pictures Op. 85, No. 12

	61	62	63	64	65	66	67
measures							
Bbm	I VI ⁷	bII i ^{d7}	bII VII ⁷	III iii	IV ⁷ i ^f It	III ⁷ i ^t It	bII V ⁷
CbM	:V ⁷	I vii ^{d7}	I VI ⁷	II ii	III ⁷ #i ^f It	II ⁷ vii ^f It Bbm:i ^t ↗	= bII V ⁷

Fig. 20--Brahms, Intermezzo Op. 117, No. 2 meas. 61-69

CONCLUSIONS

Although the secondary dominant has been treated in some detail, a brief resumé in larger terms may throw the more important points in relief.

The role of the secondary dominant in the solo works for piano of Brahms and Dvořák was defined first according to the traditional theoretical practices. For the sake of completeness, the concept of tonicization, i.e., the theoretical concept not allowing modulation as such, was mentioned briefly in order to clarify all aspects of the role of the secondary dominant.

Secondary dominants, as defined in this study, served in dominant and non-dominant capacities. The dominant capacity or traditional usage of the secondary dominant was found to have been employed extensively. Other functions of the secondary dominant included that of additional color to the diatonic scales, additional leading-tone harmony, modulation, enlargement of the harmonic span and additional major quality to the major-minor mode.

The role of the secondary dominant in the solo works for piano of Brahms and Dvořák was studied in terms of the commonly recognized secondary dominant, which was the most extensive use, in addition to the unconventional usages, elements of modality assimilated into the major-minor mode,

and the apparent use of Phrygian elements. An analogy was made between the use of the Neapolitan sixth chord (with its half-step relationship with its tonic) and Phrygian elements, since the bII chord may be said to imply the characteristic half-step of the Phrygian mode.

The Neapolitan sixth chord became a stepping stone to other relationships. The next relationship (brought about by extension of the secondary dominant principle) was that of the tritone created between the Neapolitan sixth chord and the dominant chord of the original key and the tritone between the harmonic goal of the Neapolitan sixth chord (bV) and the original tonic.

The solo works for piano of these two composers, evidencing an increased use of the bII and bVII, witness a tight-knit key relation in as much as the bII and bVII do not subordinate the original tonic even when these two chords tend to sound strongly like dominants. The frequent use of bV illustrates how cleverly these chords are employed without endangering the principal tonality.

Such a study of the extension of the major-minor mode helped to define the limits to which harmonic digressions bore to one another and to an established tonality. It emphasized the diatonic elements by establishing order within the chromatic elements of which secondary dominant chords are a type of "transposed diatonicism." The secondary dominant began to lose its connotation of "color-modification" of

diatonicism and began in the romantic period to establish itself as a more independent tonal province. Such an organization helped overcome the disadvantage of too frequent modulation which often resulted in loss of harmonic perspective or loss of contact with the gravitational attraction of the tonic.

The chords enumerated in the previous chapter and many other chords found in these works are the result of chromatically conceived chords used diatonically. Both composers used a number of chords which are not included in common practice, but are well within the confines of tonality. The increased importance of the chromatic elements of the major-minor mode created possibilities for greater melodic and harmonic freedom without recourse to modulation. The mere fact that there were more related tones in the major-minor system facilitated and even simplified the process of modulation. It might be said that the natural impulse toward chromaticism helped to define the diatonic scale structure.

APPENDIX

TABLE I

SECONDARY DOMINANTS IN SOLO WORKS
FOR PIANO BY DVORÁK

Composition	I ⁷	II	bII	III	bIII	bV	VI	bVI	bVII
<u>Polka in E</u> Major Op. --	..	2	..	1	..	..	..	..	..
<u>Minuet Op. 28</u> No. 1	9	..	..	..	..	..	2	..	..
<u>Minuet Op. 28</u> No. 2	..	..	..	..	..	..	..	..	1
<u>Dumka in D</u> Minor Op. 35	10	2	..	2	..	..	..	..	..
<u>Tema con</u> <u>Variazioni</u> Op. 36	2	..	..	..	4	..	..	2	1
<u>Variation</u> Op. 36 No. 1	2	1	2	2	13	..	1	14	..
<u>Variation</u> Op. 36 No. 2	3	..	1	..	9	..	..	9	..
<u>Variation</u> Op. 36 No. 3	5	..	..	2	10	3 ^a	..	10	..
<u>Variation</u> Op. 36 No. 4	1	..	..	..	2	..	..	2	..

TABLE I--Continued

<u>Composition</u>	<u>I⁷</u>	<u>II</u>	<u>bII</u>	<u>III</u>	<u>bIII</u>	<u>bV</u>	<u>VI</u>	<u>bVI</u>	<u>bVII</u>
<u>Variation</u> Op. 36 No. 5	..	..	..	..	4	..	..	4	..
<u>Variation</u> Op. 36 No. 6	2	5	..	..	1	..	1	1	2
<u>Variation</u> Op. 36 No. 7	2	1	..	2	5	..	2	6	..
<u>Variation</u> Op. 36 No. 8	..	..	..	1	5	..	..	7	..
<u>Silhouettes</u> Op. 8 No. 1	..	..	..	2	..	2 ^b	..	..	..
<u>Silhouettes</u> Op. 8 No. 2	2	..	..	..	..	..	..	..	..
<u>Silhouettes</u> Op. 8 No. 3	..	8	..	..	..	..	..	..	..
<u>Silhouettes</u> Op. 8 No. 4	..	7	..	..	..	..	..	..	..
<u>Silhouettes</u> Op. 8 No. 5	2	..	..	..	..	..	..	..	..
<u>Silhouettes</u> Op. 8 No. 8	..	1	..	..	..	..	..	..	..
<u>Silhouettes</u> Op. 8 No. 11	..	4	..	..	..	..	..	..	..
<u>Waltzes</u> Op. 54 No. 1	3	2	..	2	..	..	3	..	..

TABLE I--Continued

Composition	i ⁷	II	bII	III	bIII	bV	VI	bVI	bVII
<u>Waltzes</u> Op. 54 No. 2	5	3	..	5	..	..	..	..	5 ^b
<u>Waltzes</u> Op. 54 No. 3	1	..	..	..	..	..	..	..	..
<u>Waltzes</u> Op. 54 No. 4	..	3	..	1	..	..	..	..	..
<u>Waltzes</u> Op. 54 No. 5	..	7	1	..	..	..	..	..	..
<u>Waltzes</u> Op. 54 No. 6	1	..	..	..	..	..	..	..	..
<u>Waltzes</u> Op. 54 No. 8	..	..	..	2	..	..	..	..	..
<u>Eklogy</u> Op. 56 No. 1	..	2	..	..	..	..	..	..	..
<u>Eklogy</u> Op. 56 No. 2	3	..	..	..	..	..	8	..	..
<u>Eklogy</u> Op. 56 No. 4	..	..	..	6	..	..	..	..	..
<u>Souvenirs</u> Op. -- No. 1	..	4	..	..	..	..	..	..	..
<u>Souvenirs</u> Op. -- No. 2	..	1	..	..	..	..	..	..	..
<u>Impromptu</u> Op. -- No. 2	..	..	1	..	..	..	..	..	..

TABLE I--Continued

Composition	I ⁷	II	bII	III	bIII	bV	VI	bVI	bVII
<u>Impromptu</u> Op. 52	10	1	6	8	..	..	..	1	2
<u>Intermezzo</u> Op. 52	..	1	..	..	..	..	..	1	..
<u>Mazurkas</u> Op. 56 No. 1	8	..	..	..	4	..	..	..	4
<u>Mazurkas</u> Op. 56 No. 4	1	1	..	3	..	..	1	..	..
<u>Mazurkas</u> Op. 56 No. 5	7	..	..	1	..	..	..	..	..
<u>Impromptu</u> in D Minor Op. --	7	4	..	..	2	..	2	..	2
<u>Humoresque</u> in F# Major Op. --	2	..	1	3	1	..	..	4	..
<u>Dumka</u> Op. 12	6	4	..	..	..	..	..	..	..
<u>Furiant</u> Op. 12	3	..	..	1	..	1 ^e	..	..	..
<u>Poetic Tone-Pictures</u> Op. 85 No. 1	1 ^d	1	14	1	..	1	1	19	1
<u>Poetic Tone-Pictures</u> Op. 85 No. 2	2	4	6	4	..	..	..	..	..

TABLE I--Continued

Composition	I ⁷	II	bII	III	bIII	bV	VI	bVI	bVII
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 3	• •	• •	• •	• •	• •	• •	• •	• •	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 4	4	• •	6	1	• •	3	1	• •	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 5	1	1	3	• •	1	• •	1	2	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 6	• •	1	• •	1	• •	1 ^e	• •	• •	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 7	10	• •	• •	6	1	• •	4	4	3
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 8	6	3	• •	• •	• •	• •	3	• •	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 9	1	• •	• •	• •	• •	• •	• •	• •	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 10	4	• •	5	• •	• •	• •	2	• •	• •
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 11	• •	• •	• •	• •	• •	• •	2	• •	• •

TABLE I--Continued

<u>Composition</u>	<u>I⁷</u>	<u>II</u>	<u>bII</u>	<u>III</u>	<u>bIII</u>	<u>bV</u>	<u>VI</u>	<u>bVI</u>	<u>bVII</u>
<u>Humoresques</u> Op. 101 No. 6	..	3	1	..	3	..	..	5	2
<u>Humoresques</u> Op. 101 No. 7	..	6	..	1	..	..	4	..	..
<u>Humoresques</u> Op. 101 No. 8	..	4	3	1	..	2	2	1	1
<u>Berceuse</u> Op. --	..	..	..	1	..	..	..	..	..
<u>Capriccio</u> Op. --	5	..	..	1	..	..	..	..	..
Total	149	100	65	65	67	11	47	97	43

^aIV⁷^bVII^cIV⁷^d#III^eVII

TABLE II
 CHORDS PRECEDING SECONDARY DOMINANTS
 IN THE PIANO SOLO WORKS OF DVORAK

Chords Preceding	Secondary Dominants										
	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
I	87	18	2	16	1	3	2	6	19	..	3
i	1	17	20	2	..	3	..	5	15	..	9
i ^{d7}	..	..	2	..	..	..	..	..	..	..	..
#i ^{It}	..	2	..	..	..	..	..	..	..	..	..
#i ^{7G}	..	4	..	..	..	..	..	..	..	..	..
#i ^{d7}	..	1	..	..	..	..	..	..	..	..	..
bI	..	..	..	..	..	1	..	..	..	..	..
I+	..	..	..	1	..	..	..	..	..	..	..
II	1	..	..	..	..	..	..	..	1	..	..
bII	1	1	..	2	..	..	2	2	4	..	1
ii	..	..	..	3	..	..	..	3	1	..	2
ii ^{d7}	..	..	..	2	1	..	..	..	..	..	..
#ii ^{7G}	..	..	..	4	..	..	..	..	..	..	..

TABLE II--Continued

Chords Preceding	Secondary Dominants										
	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
VI	•	12	4	4	•	•	•	•	•	•	•
vI	3	14	•	7	•	•	•	•	7	1	•
bVI	1	•	7	•	51	•	1	1	•	•	•
#vI ^{d7}	•	1	•	•	•	•	1	•	•	•	•
vI ^o	•	2	•	•	•	•	•	•	•	•	•
#vI ^o	•	•	•	•	•	•	•	•	•	•	4
vI ^{o7}	•	•	•	•	•	•	•	•	1	•	•
vII ^o	10	•	•	•	•	•	•	•	•	•	•
bVII	•	•	1	•	8	•	•	•	1	•	•
VII	•	•	2	2	•	•	•	•	•	•	•
bVII	•	•	2	•	•	•	•	•	•	•	•
vII ^{o7}	•	•	•	1	•	•	•	•	•	•	•

TABLE III
 CHORDS FOLLOWING SECONDARY DOMINANTS
 IN THE PIANO SOLO WORKS OF DVORAK

Chords Following	Secondary Dominants										
	i ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
I	..	8	4	2	11	..	..	..	16	..	1
I	..	1	7	..	1	2	..	..	2	1	8
bI	..	..	..	..	..	..	1	..	..	..	..
i ^{d7}	..	..	..	1	..	..	1	..	..	..	..
#i ^{o7}	1	..	..	..	..	..	..	..	..	..	..
#i ^{d7}	..	..	..	..	..	..	..	..	..	1	..
II	3	..	2	..	..	..	..	10	1	..	..
11	..	9	..	4	2	..	..	13	4	1	1
bII	5	..	..	2	..	..	..	5	7	2	1
#11 ^{d7}	2	1	..	..	..	..	..	..	..	..	..
11 ^{o7}	..	..	2	..	..	..	..	..	..	..	..
11 ^o	..	..	..	5	..	..	..	..	..	..	..
#11 ^{7G}	..	..	..	1	..	..	..	..	..	..	..

TABLE III--Continued

Chords Following	Secondary Dominants										
	I-7	II	bII	III	bIII	IV7	bV	VI	bVI	VII	bVII
v ^o	2	..	..	..	..	..	..	..	..
bv	1	..	..	..	..	..	..	..	..
v ^o 7	2	..	..	..	..
v	1	..	..	..	..	..	..	..
VI	2	7	2	..	1	..	1	..	..
bVI	3	1	4	3	32	..	..	..	..	..	1
vi	4	1	2	23	..	..	..	..	..	..	..
vi ^o 7	1	1	..	..	..	..	..	..	..
#vi ^d 7	5	..	..	..
VII	3	..	..	..	..	..	..	..
bVII	1	..	2	1	..	..	..	..	..
vii ^o	6	..	..	..	..	..	..	..	2	..	..
vii ⁷ G	..	4	1	..	..	..	..	..	..	..	..
vii ^o 7	..	2	..	..	..	..	..	..	..	..	..
vii ^d 7	1	..	..	..	4	..	..	1	1

TABLE IV
UNUSUAL PROGRESSIONS IN THE PIANO
SOLO WORKS OF DVORAK

Composition	Measure	Progression
<u>Minuet</u> Op. 28 No. 2	33-35	$V^7-VII^7-V^7$
<u>Theme and Variations</u> Op. 36	8-10	$V^7-bVI-bIII-\#iii^{d7}-IV^7-\#iv^{It}$
<u>Variation</u> Op. 36 No. 3	32-34	$V-bVI-bIII-iii^{d7}$
	50-52	$I^7-IV^7-\#iv^{d7}$
<u>Variation</u> Op. 36 No. 6	2-3	$I-II^7-IV-\#iv^7-V^7$
	4-5	$IV-II^7-\#v^{d7}$
	21	$I^7-\#v^{d7}-IV$
	23-24	$IV-VII-\#i^{d7}$
	29-30	$\#v^{d7}-VI-II^7-IV$
	32-34	$V-bVI-bIII-\#iii^{d7}$
<u>Variation</u> Op. 36 No. 7	16-17	$\#ii^{It}-III-VI-ii$
<u>Silhouettes</u> Op. 8 No. 1	1-3	$II^7-\#iv^{7G}-II^7-\#i^{o7}$
<u>Waltzes</u> Op. 54 No. 2	42-44	$iv-VII-vii^{d7}$
<u>Waltzes</u> Op. 54 No. 3	124-125	I^7-V
<u>Eklogy</u> Op. 56 No. 2	18	$I-I^7-\#iv^o$
	23	$I-I^7-II^7$
<u>Souvenirs</u> Op. -- No. 2	41-43	$\#vi^{d7}-II^7-V^7$

TABLE IV--Continued

Composition	Measure	Progression
<u>Impromptu</u> Op. -- No. 2	107-108	i-bII-vii ^{7G}
<u>Impromptu</u> Op. 52	17-20	I-bII-II ⁷ -i
<u>Mazurkas</u> Op. 56 No. 1	14-21	I ⁷ -IV-bVII-bIII-ii-vii ^o ₆
<u>Impromptu in D</u> Minor Op. --	56	#i ^{It} -II ⁷ -v
<u>Furiant</u> Op. 12	131-138	i-IV ⁷ -#ii ^{7G} -III-#v ^{d7}
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 1	126-127 146-148	I-bII-II-III-#III-IV-bV-V i-bII-bVI-v ⁷ -i
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 2	63-64	I ⁷ -#ii ^{d7} -II-ii ⁷
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 4	12-13 20-21 31-32 34-35 44-45	I ⁷ -bII-#iv ^{7G} I ⁷ -#i ^{o7} I-bV-v ^{o7} v ^{o7} -III ⁷ -#iv ^{o7} I ⁷ -bVI
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 5	122-125 125-128	#iv ^{d7} -VI-II-#ii ^{d7} #ii ^{d7} -I ⁷ -vii ^o
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 6	53-55	#i ^{d7} -II ⁷ -vii ^{o7}
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 7	27-28 109-110	I-#iv ^{It} I ⁷ -vii ^{d7}
<u>Poetic</u> <u>Tone-Pictures</u> Op. 85 No. 10	28-30	i-bII-#iv ^{7G}

TABLE IV--Continued

Composition	Measure	Progression
<u>Poetic Tone-Pictures</u> Op. 85 No. 12	1-2	bV-vii ^{d7} -I
	33-35	bvii-bII-v ^o
	42-44	I-bII-bv
	56	v ^o -I-bII-bV-iv
	76-78	v ^o -bII ⁷ -i
	83	i-bII-#iii ^{d7}
<u>Suite in A Major</u> Op. 98 No. 1	22-23	iv-bVII-bII-bVII-#iv ^{It}
<u>Suite in A Major</u> Op. 98 No. 2	48-50	i-VI-#vi ^o -bVII ⁷ -i
<u>Humoresque</u> Op. 101 No. 3	31	IV-III-iii ^{o7}
	35	IV+-bVII-bIII-#iv ^{7G}
<u>Humoresque</u> Op. 101 No. 6	51-52	I-III-bIII+-II ⁷ -v
	78-80	vi ^{o7} -bVI-iv ^{7G} -v
<u>Humoresque</u> Op. 101 No. 8	36-40	iv-VI ⁷ -#vi ^{d7} -bV-i ^{d7} -bII-i
	49-50	#i ^{d7} -#i ^{7G} -II-vii ^{7G} -I
<u>Capriccio</u> Op. --	3	i-I-ii ^o

TABLE V

SECONDARY DOMINANTS IN SOLO WORKS
FOR PIANO BY BRAHMS

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Sonata in C Major Op. 1 Allegro</u>	3	10	9	4	3	..	2	5	..	4	4
<u>Sonata in C Major Op. 1 Andante</u>	3	5	9	11	..	..	..	9	3	8	2 ^a
<u>Sonata in C Major Op. 1 Scherzo</u>	2	9	10	1	6	..	..	4	..	..	..
<u>Sonata in C Major Op. 1 Finale</u>	3	7	1	3	..	..	..	2	..	..	2 ^b
<u>Sonata in F# Minor Op. 2 Allegro non troppo</u>	3	6	..	1	..	..	..	2	..	..	..
<u>Sonata in F# Minor Op. 2 Andante con espressione</u>	1	2	5	2	..	2	1	3	1	..	1
<u>Sonata in F# Minor Op. 2 Scherzo</u>	..	..	38	..	..	..	24	1	..	..	3
<u>Sonata in F# Minor Op. 2 Finale</u>	14	17	7	4	..	3	4	15	2	4	..

TABLE V--Continued

<u>Composition</u>	<u>i⁷</u>	<u>II</u>	<u>bII</u>	<u>III</u>	<u>bIII</u>	<u>IV⁷</u>	<u>bV</u>	<u>VI</u>	<u>bVI</u>	<u>VII</u>	<u>bVII</u>
<u>Scherzo in Eb</u> <u>Minor Op. 4</u>	4	23	11	12	4	1	6	10	2	7	4
<u>Sonata in F</u> <u>Minor Op. 5</u> <u>Allegro</u> <u>maestoso</u>	9	9	1	4	2	1	2 ^c	2	3	2	2
<u>Sonata in F</u> <u>Minor Op. 5</u> <u>Andante</u>	9	8	.	4	8	9	.	.	2	.	9
<u>Sonata in F</u> <u>Minor Op. 5</u> <u>Scherzo</u>	8	4	7	2	1	2	2	3	1	1	2
<u>Sonata in F</u> <u>Minor Op. 5</u> <u>Intermezzo</u>	.	.	4	.	.	2	.	1	.	2	.
<u>Sonata in F</u> <u>Minor Op. 5</u> <u>Finale</u>	9	10	5	6	5	1	4	5	8	7	1
<u>Variations</u> <u>Op. 9--Theme</u>	.	2	.	.	.	.	.	.	.	.	.
<u>Variations</u> <u>Op. 9</u> <u>Variation 1</u>	.	1	.	.	.	.	.	1	.	1	.
<u>Variations</u> <u>Op. 9</u> <u>Variation 3</u>	1	.	.	.	1	1	.	.	.	.	.

TABLE V--Continued

<u>Composition</u>	<u>i⁷</u>	<u>II</u>	<u>bII</u>	<u>III</u>	<u>bIII</u>	<u>IV⁷</u>	<u>bV</u>	<u>VI</u>	<u>bVI</u>	<u>VII</u>	<u>bVII</u>
<u>Variations</u> Op. 9 Variation 4	1	1	• • •	• • •	• • •	• • •	• • •	• • •	• • •	• • •	• • •
<u>Variations</u> Op. 9 Variation 5	1	1	2	• •	• • •	• • •	• • •	1	1 ^d	• •	• •
<u>Variations</u> Op. 9 Variation 6	• •	2	2	3	• •	• •	3	1	• •	• •	2 ^e
<u>Variations</u> Op. 9 Variation 7	2	• •	1	1	• •	• • •	• • •	• • •	• • •	• • •	• •
<u>Variations</u> Op. 9 Variation 8	1	• •	• •	• •	• •	• • •	• • •	• • •	• • •	• • •	• •
<u>Variations</u> Op. 9 Variation 9	1	• •	1	3	• •	• • •	• • •	1	• •	2	• •
<u>Variations</u> Op. 9 Variation 10	• •	2	• •	• •	• •	• • •	• • •	• • •	• • •	• • •	• •
<u>Variations</u> Op. 9 Variation 11	3	• •	• •	• •	• •	• • •	• • •	2	• •	• •	• •
<u>Variations</u> Op. 9 Variation 12	2	• •	• •	1	• •	1	• •	1	• •	2 ^f	1

TABLE V--Continued

Composition	\bar{i}^7	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Variations</u> Op. 21 No. 1 Variation 2	1	2	..	1	..	1	..	1	1	..	..
<u>Variations</u> Op. 21 No. 1 Variation 3	2	1	..	..	..	..	..	..	1	..	1
<u>Variations</u> Op. 21 No. 1 Variation 4	2	1	..	2	..	..	..	..	1	3	..
<u>Variations</u> Op. 21 No. 1 Variation 5	1	1	..	..	..	..	..	..	..	1	..
<u>Variations</u> Op. 21 No. 1 Variation 6	2	..	..	2	..	..	..	..	..	2	..
<u>Variations</u> Op. 21 No. 1 Variation 7	1	2	..	..	..	..	..	..	..	1	..
<u>Variations</u> Op. 21 No. 1 Variation 8	..	1	1	..	..	..	..	..	2	2	..
<u>Variations</u> Op. 21 No. 1 Variation 9	2	1	..	1	..	1	..	1	1	..	..
<u>Variations</u> Op. 21 No. 1 Variation 10	..	1	..	2	..	..	..	1	..	2	..

TABLE V--Continued

Composition	\bar{I}^7	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Variations</u> Op. 21 No. 1 Variation 11	9	1	..	2	..	1	..	1	..	4	..
<u>Variations</u> Op. 21 No. 2	..	1	..	..	..	..	..	..	..	..	..
<u>Variations</u> Op. 21 No. 2 Variation 1	..	..	..	1	..	..	..	1	..	2	..
<u>Variations</u> Op. 21 No. 2 Variation 2	..	..	..	4	..	..	..	1	..	4	..
<u>Variations</u> Op. 21 No. 2 Variation 3	1	..	3	1	..	..	..	5	..	2	..
<u>Variations</u> Op. 21 No. 2 Variation 4	..	1	..	3	..	..	..	2	..	3	..
<u>Variations</u> Op. 21 No. 2 Variation 5	1	1	..	..	..	..	..	..	..	..	..
<u>Variations</u> Op. 21 No. 2 Variation 6	4	5	..	..	..	..	..	..	..	..	..
<u>Variations</u> Op. 21 No. 2 Variation 7	1	2	..	..	..	..	..	1	..	..	..

TABLE V--Continued

Composition	\bar{I}^7	II	bII	III	bIII	IV^7	bV	VI	bVI	VII	bVII
<u>Variations</u> Op. 21 No. 2 Variation 8	2	.	.	.	.	.	.	1	.	.	.
<u>Variations</u> Op. 21 No. 2 Variation 9	2	.	.	.	.	.	.	.	.	.	.
<u>Variations</u> Op. 21 No. 2 Variation 10	.	1	.	.	.	.	.	.	.	.	.
<u>Variations</u> Op. 21 No. 2 Variation 11	.	1	.	.	.	.	.	.	.	.	.
<u>Variations</u> Op. 21 No. 2 Variation 12	.	1	.	.	1	.	.	.	.	.	1
<u>Variations</u> Op. 21 No. 2 Variation 13	5	7	3	4	.	.	1	4	1	5	1
<u>Variations</u> <u>and Fugue</u> Op. 24 Variation 2	2	2	.	.	.	.	.	.	.	.	.
<u>Variations</u> <u>and Fugue</u> Op. 24 Variation 3	2	.	.	.	.	.	.	.	.	.	.
<u>Variations</u> <u>and Fugue</u> Op. 24 Variation 4	.	.	.	1	.	.	.	1	.	1	.

TABLE V--Continued

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Variations and Fugue</u> Op. 24 Variation 5	. . . .		2	4	. . . .	. . . .	. . . .	2	. . . .	. . . .	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 6	. . . .		1	. . . .	. . . .	. . . .	. . . .	1	. . . .	1	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 7	. . . .		1	1	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 8	2	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 9	4	1	1	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 11	3	1	. . . .	1	. . . .	1	. . . .	. . . .	. . . .	. . . .	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 12	1	. . . .	1	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
<u>Variations and Fugue</u> Op. 24 Variation 13	. . . .	. . . .	. . . .	10	. . . .	. . . .	. . . .	2	. . . .	8	. . . .

TABLE V--Continued

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Variations and Fugue</u> Op. 24 Variation 16	1	.	.	.	.	.	.	.	.	.	.
<u>Variations and Fugue</u> Op. 24 Variation 17	4	.	.	.	2	.	.	.	2	.	2
<u>Variations and Fugue</u> Op. 24 Variation 18	1	1	.	.	1	.	.	.	1	.	1
<u>Variations and Fugue</u> Op. 24 Variation 20	4	2	2	4	6	.	.	4	.	8	.
<u>Variations and Fugue</u> Op. 24 Variation 21	3	.	.	.	.	.	.	.	.	.	.
<u>Variations and Fugue</u> Op. 24 Fugue	15	13	.	1	.	.	.	3	.	.	1
<u>Variations</u> Op. 35 Book I	.	2	.	.	.	.	.	.	.	.	.
<u>Variations</u> Op. 35 Book I Variation 1	2	.	2	2	.	.	.	.	.	2	.

TABLE V--Continued

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Variations</u> Op. 35 Book I Variation 2	2	2	2	2	.	.	.	.	.	2	.
<u>Variations</u> Op. 35 Book I Variation 3	2	.	2	2	.	.	.	2	.	2	.
<u>Variations</u> Op. 35 Book I Variation 4	4	.	2	4	.	.	.	.	.	4	.
<u>Variations</u> Op. 35 Book I Variation 5	1	2	.	1	.	.	.	1	.	1	.
<u>Variations</u> Op. 35 Book I Variation 6	2	2	2	.	.	.	.	.	.	.	.
<u>Variations</u> Op. 35 Book I Variation 7	1	.	1	1	.	.	.	1	.	1	.
<u>Variations</u> Op. 35 Book I Variation 10	1	3	1	1	.	.	.	.	.	1	.
<u>Variations</u> Op. 35 Book I Variation 11	1	.	.	.	.	.	.	1	.	1	.
<u>Variations</u> Op. 35 Book I Variation 12	1	1	.	.	.	.	.	1	.	.	1 ⁱ

TABLE V--Continued

Composition	\bar{I}^7	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Variations</u> Op. 35 Book II Variation 11	.	.	2	1	.	2	.	1	.	2	.
<u>Variations</u> Op. 35 Book II Variation 12	1	1	.	1	.	.	.	.	.	.	.
<u>Variations</u> Op. 35 Book II Variation 13	2	2	1	2	.	.	.	.	.	2	.
<u>Capriccio in</u> <u>F# Minor</u> Op. 76 No. 1	2	1	4	4	.	1	.	1 ^k	.	.	.
<u>Capriccio in</u> <u>B Minor</u> Op. 76 No. 2	3	6	4	.	.	.	.	2	3	1	.
<u>Intermezzo in</u> <u>Ab Major</u> Op. 76 No. 3	1	1	.	.	.	.	2	.	.	3	.
<u>Intermezzo in</u> <u>Bb Major</u> Op. 76 No. 4	2	.	.	.	.	.	.	.	.	.	.
<u>Capriccio in</u> <u>C# Minor</u> Op. 76 No. 5	11	6	.	.	.	2	.	.	.	.	.
<u>Intermezzo in</u> <u>A Major</u> Op. 76 No. 6	8	8	.	1	.	.	.	1	.	.	.

TABLE V--Continued

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Intermezzo</u> in A Minor Op. 76 No. 7	. .	1 . .		6 . .		. . . .		2			6
<u>Capriccio</u> in C Major Op. 76 No. 8	13	3	2	1 . .		. . . .			1 . . . .		. .
<u>Rhapsody</u> in B Minor Op. 79 No. 1	11	1	1 . .			. . . .		. . . .			. .
<u>Rhapsody</u> in G Minor Op. 79 No. 2	1 . .	. . . .		. . . .		. . . .		2 . . . .			. .
<u>Capriccio</u> in D Minor Op. 116 No. 1	2	2 . .		2 . .		1		2			2
<u>Intermezzo</u> in A Minor Op. 116 No. 2	10	7 . .		7 . .		1		7			4
<u>Capriccio</u> in G Minor Op. 116 No. 3	1	4	4	2	2 ¹	4	4	1	1	3	5
<u>Intermezzo</u> in E Major Op. 116 No. 4	4	2 . . . .		. . . .		. . . .		. . . .			. .
<u>Intermezzo</u> in E Minor Op. 116 No. 5	. .	4	3	2 . .		. . . .		1 . . . .			. .

TABLE V--Continued

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Intermezzo</u> in E Major Op. 116 No. 6	4	4	5	1	..	..	..	3	..	..	5
<u>Capriccio</u> in D Minor Op. 116 No. 7	..	2	1	1	..	..	..	..	..	..	..
<u>Intermezzo</u> in Eb Major Op. 117 No. 1	2	3	2	..	..	1	..	..	..	1	..
<u>Intermezzo</u> in Bb Minor Op. 117 No. 2	9	6	3	8	1	3	..	6	1	3	..
<u>Intermezzo</u> in C# Minor Op. 117 No. 3	4	..	6	2	..	3	..	3	..	..	..
<u>Intermezzo</u> in A Minor Op. 118 No. 1	3	2	..	2	..	1	..	1	..	..	..
<u>Intermezzo</u> in A Major Op. 118 No. 2	..	9	1	1	..	..	..	1	4	1	..
<u>Ballade</u> in G Minor Op. 118 No. 3	9	10	2	12	..	13	..	16	5	20	..
<u>Intermezzo</u> in F Minor Op. 118 No. 4	16	8	5	1	..	2	..	..	..	..	4

TABLE V--Continued

Composition	\bar{i}^7	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Romance</u> in F Major Op. 118 No. 5	2	5	. .	3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	1	. .
<u>Intermezzo</u> in Eb Minor Op. 118 No. 6	1	4	1	5	. . . . .	. . . . .	. . . . .	5	. . . . .	. . . . .	. . . . .
<u>Intermezzo</u> in B Minor Op. 119 No. 1	3	5	. .	5	. . . . .	1 . . . . .	. . . . .	7	. . . . .	5	. . . . .
<u>Intermezzo</u> in E Minor Op. 119 No. 2	7	8	8	8	. . . . .	. . . . .	2	10	. . . . .	10	2
<u>Intermezzo</u> in C Major Op. 119 No. 3	1	2	4	. . . . .	. . . . .	. . . . .	3 . . . . .	. . . . .	1 . . . . .	. . . . .	. . . . .
<u>Rhapsody</u> in Eb Major Op. 119 No. 4	3	6	2	1	4 . . . . .	. . . . .	. . . . .	. . . . .	8	1 . . . . .	. . . . .
<u>Sarabande</u> No. 1	3	. . . . .	1	2 . . . . .	. . . . .	1 . . . . .	. . . . .	2 . . . . .	. . . . .	2 . . . . .	. . . . .
<u>Sarabande</u> No. 2	2	. . . . .	. . . . .	4 . . . . .	. . . . .	1 . . . . .	. . . . .	3 . . . . .	. . . . .	3 . . . . .	. . . . .
<u>Theme and</u> <u>Variations</u>	3	3 . . . . .	. . . . .	4 . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	4 . . . . .	. . . . .
<u>Theme and</u> <u>Variations</u> Variation 1	2	1 . . . . .	. . . . .	2 . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	3 . . . . .	. . . . .

TABLE V--Continued

Composition	I ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Theme and Variations</u> Variation 2	2	2	. .	2	. .	. . .	. . .	. . .	. . .	4	. .
<u>Theme and Variations</u> Variation 3	2	2	. .	2	. .	. . .	. . .	1 . .	. .	4	. .
<u>Theme and Variations</u> Variation 4	4	2	. .	2	. .	. . .	. . .	2 . .	. .	2	. .
<u>Theme and Variations</u> Variation 5	4	. . .	. . .	. .	. . .	. . .	. . .	1 . .	. .	1	. .
<u>Theme and Variations</u> Variation 6	2	2	. .	2	. .	. . .	. . .	. . .	. . .	2	. .
<u>Hungarian Dances in G</u> Minor No. 1	10	3	. .	2	. .	. . .	. . .	7 . .	. .	10	. .
<u>Hungarian Dances in D</u> Minor No. 2	. .	5	. .	8	. .	. . .	. . .	5 . .	. .	. .	. .
<u>Hungarian Dances in F#</u> Minor No. 4	1	. . .	. . .	6	. .	1 . .	. . .	. . .	. . .	6	. .
<u>Hungarian Dances in F#</u> Minor No. 5	2	. . .	. . .	2	. .	. . .	. . .	2 . .	. .	2	. .

TABLE V--Continued

Composition	I-7	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
<u>Hungarian</u> <u>Dances in Db</u> Major No. 6	. .	3	. .	2	. .	. .	. .	1	. .	1	. .
<u>Hungarian</u> <u>Dances in F</u> Major No. 7	. .	4	. .	2	. .	. .	. .	. .	. .	. .	. .
<u>Hungarian</u> <u>Dances in A</u> Minor No. 8	. .	1	. .	17	. .	3	. .	13	. .	13	. .
<u>Hungarian</u> <u>Dances in E</u> Minor No. 9	1	5	. .	2	. .	. .	. .	1	. .	3	. .
<u>Hungarian</u> <u>Dances in E</u> Major No. 10	1	2	. .	. .	6	. .	. .	. .	2	. .	. .
Total	398	386	238	308	54	68	61	265	63	241	65

a#VI b#VII c#IV d#VI e#VII f#VII
g#VII h#VII i#VII⁷ j#VII k#VI⁷ l#VI

II	6	..	..	1	..	2	5	2°	1	..
bIII	4	1	..	6	..	47	13	6	7	3
ii	6	10	..	3	2	..	3	..	2	5
ii°	1	7	..	7	..	..	..	1	3	..
bii	..	..	..	..	..	..	4	..	..	..
ii7	..	9	..	2	..	..	..	..	..	..
ii°7	5	2	..	1	..	..	..	..	2	1
ii d7	..	..	1	5	4	..	..	..	3	..
#ii°	..	..	..	..	..	..	..	..	1	..
#ii d7	2	..	..	3	..	..	..	..	..	..
#ii It	2	2	..	2	..	..	..	..	..	..
#ii7G	1	..	..	1	..	..	..	..	..	..
III	5	11	20	..	4	..	52	3	34	1d
III	..	..	..	..	..	..	2°	..	..	..
bIII	2	..	5	..	..	..	..	13	2	8
III+	1	..	..	..	..	..	9	..	..	..
bIII+	..	..	..	..	..	..	..	..	1	..
(#)III	1	..	..	..	..	..	..	..	..	..
iii	3	3	1	5	5	..	5	1	9	1

TABLE VI--Continued

Chords Preceding	Secondary Dominants										
	i ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
iii	..	..	..	..	..	..	..	..	..	3 ^f	..
iii ^o	..	2	1	..	..	..	..	..	..	..	..
iii+	1	2	..	..	..	..	..	..	..	..	..
iii ^t	..	..	..	..	..	..	..	..	..	..	1
iii ^{d7}	..	..	3	1	2	..	..	..	..	..	..
iii ^{o7}	..	2	..	..	..	..	..	1	1	..	..
#iii ^{d7}	3	..	..	..	..	..	..	..	..	..	..
IV	38	10	5	2	..	3	..	5	..	12	4
IV	..	..	..	..	..	..	..	..	..	18	..
IV ⁷	2	5	..	..	..	..	..	3	..	21	6
iv	22	17	26	17	1	4	..	7	1	34	..
iv ⁷	8	..	..	1	..	..	..	..	..	11	..
iv ^{o7}	..	..	..	..	..	..	..	..	..	2	1
iv ^{d7}	..	..	..	..	..	..	3	..	..	..	2

TABLE VI--Continued

Chords Preceding	Secondary Dominants										
	i ⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
vI	6	23	..	12	..	..	1	5	..	2	..
vI	..	..	..	..	..	..	..	..	..	1 ^j	..
vI ^o	..	2	..	..	..	..	..	..	..	1	1
vI ⁷	..	2	..	..	..	..	..	..	..	1	..
vI ^{d7}	..	..	..	..	..	..	..	..	..	2	1
vI ^{7G}	..	..	..	..	2	..	..	..	..	..	..
#vI	..	..	..	..	..	1	..	..	..	..	..
#vI ^{o7}	..	5	..	1	..	..	..	1 ^k	..	..	..
#vI ^{d7}	..	3	..	..	..	..	..	..	..	8	..
#vI ^{7G}	..	..	..	..	..	..	..	..	..	..	..
VII	10	6	1	112	2	4	..	6	1	..	..
bVII	1	1	..	10	15	1	..	1	..	..	..
bVII+	..	..	..	..	1	..	..	..	..	..	..
(#)VII	..	..	1	3	..	..	..	..	..	..	..

vii	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
vii ^o	11	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
vii ^{o7}	5	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
vii ⁷	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
vii ^{d7}	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
bvii	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
vii ^{7G}	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
vii ^{It}	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

$a(\#)VII$ $b(\#)IV?$ $c(\#)VII$ $d(\#)VII$ $e(\#)VI$ $f(\#)VII$ $g(\#)VII$
 $h(\#)VII$ $i(\#)VII$ $j(\#)VII$ $k(\#)VI$

TABLE VII

CHORDS FOLLOWING SECONDARY DOMINANTS
IN THE PIANO SOLO WORKS OF BRAHMS

Chords Following	Secondary Dominants										
	I ⁻⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
I	2	25	5	2	..	..	2	..	2	3	..
I ⁷	..	6	5	5	2	..	..	5	1	12	1
I+	2	..	..	..	..	..	..	..	..	..	..
i	..	32	32	27	..	..	..	12	2	7	3
i ^o	..	..	1	..	..	..	..	..	..	..	..
i ⁷	..	..	..	1	..	..	..	5	..	1	1
i ^{d7}	..	..	..	7	..	..	1	1	..	..	..
#i ^o	1	..	..	..	..	..	..	..	..	..	..
#i ^{d7}	6	1	..	..	..	..	..	1	..	..	..
#i ^{It}	..	..	..	1	..	..	..	..	..	..	..
#i ^{7G}	1	2	..	3	..	..	..	..	..	1	..
II	13	..	..	10	..	5	..	21	4	6	1
bII	15	..	..	20	6	..	41	33	7	1	1

TABLE VII--Continued

Chords Following	Secondary Dominants										
	I ⁻⁷	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
iv ^o	•	2	•	•	•	•	•	2	•	•	•
iv ⁷	•	•	•	•	•	1	•	•	•	•	•
iv	116	5	10	28	4	3	•	11	1	6	1
iv ^{o7}	•	•	•	•	•	•	•	•	•	•	1
iv ^{d7}	•	•	2	•	•	•	2	•	•	•	1
#iv ^o	5	•	•	1	•	•	•	•	•	1	•
#iv ^{o7}	•	1	•	•	•	•	•	•	•	•	•
#iv ^{It}	•	1	•	•	•	•	•	•	•	•	•
#iv ^{d7}	•	•	•	•	•	•	•	3	•	•	•
#iv ^{7G}	2	2	1	2	•	8	•	1	1	5	1
V	•	1	•	•	•	2	•	4	5	•	•
V	2	216	43	16	4	1	•	17	6	24	8
bV	•	•	•	•	•	1 ^f	•	•	•	2 ^g	•
bV+	1	2	47	•	•	•	•	•	•	•	•
v	•	•	•	•	•	•	3	•	•	•	•
v	1	43	2	2	1	•	•	5	1 ^h	4	1

TABLE VII--Continued

Chords Following	Secondary Dominants										
	I-7	II	bII	III	bIII	IV ⁷	bV	VI	bVI	VII	bVII
#vi ^{d7}	•	•	1	•	•	•	•	7	•	4	•
#vi ^{It}	•	2	•	•	•	•	•	•	•	•	•
#vi ^{7G}	2	•	•	•	•	•	•	1	•	•	•
VII	2	1	8	37	1	21	2	17	2	•	•
bVII	1	•	2	•	9	5	•	5	1	•	•
bVII+	•	•	•	•	•	•	•	•	•	•	1
vii	•	1	•	1	•	•	•	1	•	5	2 ¹
vii ^o	•	1	4	1	2	•	•	•	•	3	•
vii ^{o7}	•	1	•	•	•	1	•	•	•	•	•
vii ^{d7}	2	5	5	9	•	•	•	3	1	1	5
vii ^{It}	•	2	•	2	•	•	•	1	•	•	•
bvii	•	•	1	•	•	1	•	•	•	•	1
vii ^{7G}	•	•	1	•	•	•	•	•	•	•	•
(#)VII	•	•	•	1	•	•	•	•	•	•	•

a(#)VII b(#)VI c(#)VII d(#)VII e(#)VI f(#)IV⁷ g(#)VII h(#)VI i(#)VII 91

TABLE VIII
UNUSUAL PROGRESSIONS IN THE PIANO
SOLO WORKS OF BRAHMS

Composition	Measure	Progression
<u>Capriccio</u> Op. 76 No. 1	17-20	$i-\#vi^{\circ 7}-III-\#vi^{\circ 7}-(\#)VI^7-v$
	21-22	$\#vi^{\circ 7}-II^7-III-i$
	22-24	$i-IV^7-\#iv^{d7}-v-i$
	67-68	$vii^{\circ}-I^7-\#vi-IV$
<u>Capriccio</u> Op. 76 No. 2	49-51	$iii^{\circ 7}-bVI-bII^7-v^{d7}$
<u>Capriccio</u> Op. 76 No. 5	94-95	$v^7-I^7-ii-\#iv^{7G}$
<u>Capriccio</u> Op. 76 No. 8	2-3	$\#iv^{d7}-I^7-\#v^{7G}-ii^7-II^7-v^7$
	5-6	$\#iv^{d7}-I^7-I+$
	21	$v^7-I^7-\#v^{It}$
	48-49	$\#ii^{It}-I^7-III^7-IV$
<u>Capriccio</u> Op. 116 No. 1	181-184	$V-IV^7-bVII^7-iv^{\circ 7}$
	33-35	$\#iv^{\circ 7}-I^7-\#i^{d7}$
<u>Intermezzo</u> No. 2	81	$iv-IV^7-bvii$
<u>Capriccio</u> No. 3	10-13	$V-III-(\#)VI-IV-IV^7-iv$
	26-28	$i-\#iv^{7G}-IV^7-VII^7-v^7$
	63-64	I^7-VI^7-ii
<u>Intermezzo</u> No. 5	6-7	$iii^{\circ 7}-II^7-\#i^{7G}$
<u>Intermezzo</u> No. 6	47-55	$iii-VI^7-ii-I^7-bII^7-iv^{d7}-$ $bVII-iv^{d7}-iii^{d7}-bII^7-bVII-i$
	<u>Capriccio</u> No. 7	37-38	$i-II^7-v^{\circ 7}$

TABLE VIII--Continued

Composition	Measure	Progression
<u>Intermezzo</u> Op. 117 No. 1	25-26	#vi ^{7F} -II ⁷ -v ⁷
<u>Intermezzo</u> Op. 117 No. 2	64-66	ii-III ⁷ -#i ^{It} -II ⁷ -vii ^{It}
<u>Intermezzo</u> Op. 117 No. 3	75-77	I-I ⁷ -iif ^o
	103-105	#vi ^{d7} -II ⁷ -ii ^{d7}
<u>Ballade</u> Op. 118 No. 3	62-63	#iv ^{o7} -VII-iii
	18-21	v ⁷ -bVI-v ^{d7} -bVI-IV ⁷ -VII-#v ^{7G}
<u>Intermezzo</u> Op. 119 No. 1	12-16	#vi ^{o7} -II ⁷ -v-v ⁷ -I ⁷ -#vi ^{o7} -II ⁷ - v-VII ⁷ -#vi ^o -#i ^{d7} -II ⁷ -i
<u>Intermezzo</u> Op. 118 No. 6	60-62	#iv ^{d7} -IV ⁷ -#iv ^{d7}
<u>Intermezzo</u> Op. 119 No. 2	16-19	i-bII ⁷ -VII-vii ^o -III ⁷ -bii- VI ⁷ -bii-vi-bV-VI ⁷ -bVII-bii- VI-i
<u>Rhapsody</u> Op. 119 No. 4	256-257	i-bVI-#iv ^{d7}
<u>Sonata</u> Op. 1 <u>Allegro</u>	103-109	i-bII ⁷ -bII+-VII ⁷ -vi-VI ⁷ -bII- vii ^{d7}
	224-249	ii ^{d7} -bII ⁷ -bV-bII ⁷ -bV-bII ⁷ - vii ^{7G}
<u>Andante</u>	261-263	#i ^{d7} -bVII-ii
	27-29	i-II-v-II-(#)VI-ii
	23-24	V-VI-bII-#iv ^{o7}
<u>Finale</u>	116-119	I-(#)VII-vii-V

TABLE VIII--Continued

<u>Composition</u>	<u>Measure</u>	<u>Progression</u>
<u>Sonata</u> Op. 2	14-17	i-III ⁷ -#i ⁷ G-II ⁷ -#iv ^{d7}
<u>Andante</u>	39-43	iv-bII-bV-i ^{d7}
	71-73	IV-bII-bVI ⁷ -bII-#vi ^{d7}
<u>Finale</u>	35-38	iv-I ⁷ -#i ^{d7} -II-v
	251-255	I-I ⁷ -VI-vii ^{It}
	255-258	vii ^{It} -bII ⁷ -bV-i ^{d7}
	258-259	i ^{d7} -bII-bV-bv-bVI-v ^{d7}
<u>Scherzo</u> Op. 4	379-394	I-I ⁷ -iii ^{d7} -bIII ⁷ -v ^{o7}
	411-412	ii-bVII ⁷ -v ⁷
<u>Sonata</u> Op. 5	112-116	#iv ^{d7} -I ⁷ -#ii ^{d7} -I ⁷ -#v ^{d7}
<u>Allegro</u>	125-127	i-#IV ⁷ -v ⁷
<u>Finale</u>	10	#iv ^{d7} -II-iv ^o
	92-94	v ⁷ -I ⁷ -#i ^o
<u>Schumann Variations</u> Op. 9 Variation 6	3-5	v-III-vi ^{o7} -II ⁷ -v
<u>Schumann Variations</u> Op. 9 Variation 11	10-13	vi-VI ⁷ -I ⁷ -#vi ^{7G}
<u>Schumann Variations</u> Op. 9 Variation 12	9-11	V-(#)VII-V-#iv ^{d7} -(#)VII-iii
<u>Schumann Variations</u> Op. 9 Variation 16	7-11	I-(#)VII-iii-(#)VII-iii-II ⁷ -I
<u>Ballades</u> Op. 10 No. 4	62-67	I-(#)VII-III-(#)VII-III-VI- II-ii
	105-108	I-bII ⁷ -bV-bv-bIII-bVI-#iv ^{7G} - II ⁷ -ii ⁷

TABLE VIII--Continued

<u>Composition</u>	<u>Measure</u>	<u>Progression</u>
<u>Handel Variations</u> Op. 29 Variation 12	5-6	i-bII-iii ^o -iv
<u>Theme and</u> <u>Variation</u> Op. -- Variation 3	4-8	#i ^{d7} -VII ⁷ -III-VII ⁷ -III-#iv ^{d7}
<u>Paganini Variations</u> <u>Book 1</u> Variation 10	10-19	V-I ⁷ -#iii ^{d7} -IV-VII ⁷ -ii ^{d7} - III-i ^{d7} -bII-i
<u>Paganini Variations</u> <u>Book 1</u> Variation 12	5-9	V ⁷ -I ⁷ -IV-(#)VII ⁷ -iii-v-VI-ii
<u>Paganini Variations</u> <u>Book 1</u> Variation 14	4-6	V-(#)VII-V
<u>Paganini Variations</u> <u>Book 2</u> Variation 1	3-4	i-II-#vi ^{It}

TABLE IX

PERCENTAGES OF CHORDS PRECEDING SECONDARY DOMINANTS
IN THE SOLO WORKS FOR PIANO BY DVORAK

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent		
I ⁻⁷	I	69.6	III	VI	8.16	IV ⁷	I	30.0		
	vii ^o	8.0		III	4.08		#iii ^{d7}	30.0		
	IV	6.4		VII	4.08		i	30.0		
	V	4.0		bvii	4.08		bI	10.0		
	vi	2.4		i ^{d7}	4.08		bV	I	33.3	
	bIII	1.6		I	4.08			bII	33.3	
	V+	1.6		IV	2.04			bVI	16.6	
	v ^o	1.6		#iv ^{d7}	2.04			#vi ^{d7}	16.6	
	i	.8		bVII	2.04			VI	IV	25.0
	II	.8		v ^o	2.04		I		15.0	
	bII	.8		I	I		28.57		i	12.5
	#iii ^{d7}	.8			vi		12.50		III	12.5
	bVI	.8			V		8.92		ii	7.5
	iv	.8			VI		7.14		bII	5.0
	II	I			20.45		#ii ^{7G}		7.14	bIII	5.0
		i			19.31		ii	5.35	V	5.0
		vi			15.90		iv	5.35	iv ^{d7}	2.5
VI		13.63	bII	3.57	#iv ^{d7}	2.5				
V		7.95	i ^{d7}	3.57	#v ^{d7}	2.5				
#i ^{7G}		4.54	ii	3.57	bV	2.5				
#i ^{It}		2.27	VII	3.57	bVI	2.5				
#iii ^{d7}		2.27	I+	1.78	bVI	bIII	30.0			
iii		2.27	#ii ^{It}	1.78		I	19.0			
IV		2.27	#ii ^{d7}	1.78		i	15.0			
vi ^o		2.27	IV	1.78		v	15.0			
bII		1.13	v ^o	1.78		vi	7.0			
#i ^{d7}		1.13	vii ^{o7}	1.78		bII	4.0			
bIII+		1.13	bIII	bVI		80.95	III	3.0		
#iv ^{d7}		1.13		bVII		12.69	II	1.0		
#vi ^{d7}		1.13		ii ^{d7}		1.58	ii	1.0		
iv		1.13		III		1.58	IV	1.0		
bII	i	40.8		V		1.58	iv	1.0		
	bVI	14.28		I		1.58	#v ^{d7}	1.0		
	V	8.16								

TABLE IX--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
VII	vi ^{o7}	1.0	bVII	vi	12.5		ii	5.5
	bVII	1.0		i	25.0		bIII	5.5
	III	37.5		iv	19.4		IV+	5.5
	V	25.0		IV	13.8		ii ^{o7}	2.7
	IV	12.5		#vi ^o	11.1		bII	2.7
	iv	12.5		I	8.33			

TABLE X

PERCENTAGES OF CHORDS FOLLOWING SECONDARY DOMINANTS
IN THE SOLO WORKS FOR PIANO BY DVORAK

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent					
I-7	IV	44.71	III	III	3.22	IV ⁷	#iii ^{d7}	6.45					
	iv	28.45		bV	3.22		i	3.22					
	vii ^o	4.87		v ^o	3.22		iii ^{d7}	3.22					
	bII	4.06		VI	3.22		iv	3.22					
	#iv ^{It}	3.25		vi	3.22		V	3.22					
	vi	3.25		#iii ^{d7}	1.61		VI	3.22					
	II	2.43		iv	1.61		bVII	3.22					
	bVI ^{d7}	2.43		#iv ^{d7}	1.61		#iv ^{7G}	1.61					
	#ii ^{d7}	1.62		bv	1.61		ii ^{d7}	1.61					
	#i ^{o7}	.81		vi ^{o7}	1.61		i	1.61					
	III	.81		bVII	1.61		bV	vii ^{d7}	i	37.5			
	#iv ^o	.81		vii ^{7G}	1.61				#iv ^{It}	25.0			
	V	.81		vii ^{d7}	1.61				#iv ^{d7}	12.5			
	bV ^{d7}	.81		vi	36.50				bVII	12.5			
	#v	.81		VI	11.11				#ii ^{7G}	12.5			
II	V	59.09	ii ^o	7.93	VI	i	32.5						
	ii	10.22	ii	6.34		II	25.0						
	I	9.09	V	4.76		bII	12.5						
	IV	6.81	VII	4.76		#vi ^{d7}	12.5						
	vii ^{7G}	4.54	bVI	4.76		III	10.0						
	vii ^{o7}	2.27	I	3.17		V	7.5						
	i	1.13	bII	3.17		bVI	bIII	48.42					
	#ii ^{d7}	1.13	iv	3.17			I	16.84					
	iii	1.13	vi ^{o7}	1.58			V	8.42					
	iv	1.13	v ^{d7}	1.58			bII	7.36					
bVI	1.13	i ^{d7}	1.58	ii	4.21								
bII	vi	1.13	#ii ^{7G}	1.58	I	I	17.70						
	V	32.25	iii ^{o7}	1.58				bIII	bVI	51.61			
		i	11.30	bIII+							1.58		
	#iv ^{7G}	8.06	#iv ^{o7}	1.58							I	I	17.70
	I	6.45	#v ^{o7}	1.58									
	bVI	6.45	bIII	1.58									
	II	3.22	bIII	1.58									
	ii ^{o7}	3.22	bVI	51.61									

TABLE X--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
	ii ^{d7}	3.15	VII	bII	25.0		i	27.58
	i	2.10		i	12.5		V	10.34
	IV	2.10		#i ^{d7}	12.5		vi	6.89
	vii ^o	2.10		ii	12.5		I	3.44
	II	1.05		III	12.5		ii	3.44
	ii ⁻⁷	1.05		V	12.5		bII	3.44
	iv ^{7G}	1.05		vii ^{d7}	12.5		iv	3.44
	iv ^{7G}	1.05					#iv ^{It}	3.44
	VI	1.05	bVII	bIII	31.37		bVI	3.44
							vii ^{d7}	3.44

TABLE XI

PERCENTAGES OF CHORDS PRECEDING SECONDARY DOMINANTS
IN THE SOLO WORKS FOR PIANO BY BRAHMS

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
I-7	I	25.41	II	III+	.24	bII	ii ^{o7}	.50
	V	19.18		(#)III	.24		#iiIt	.50
	IV	9.11		iii+	.24		iii ^o	.50
	i	8.39		V+	.24		iii+	.50
	iv	5.27		v7	.24		iii ^{o7}	.50
	vii ^o	2.63		bVI	.24		#iv ^{7G}	.50
	VII	2.39		bVII	.24		#v ^{d7}	.50
	iv ⁷	1.92		vii	.24		v ⁷	.50
	v ^o	1.92		vii ^{7G}	.24		#iIt	.25
	vii ^{d7}	1.92					#i ^{o7}	.25
	II	1.43		I	13.78		bv	.25
	ii	1.43		i	13.53		#vIt	.25
	#iv ^o	1.43		V	12.78		vii ^{d7}	.25
	vi	1.43		v	7.76		vii ^{o7}	.25
	ii ^{o7}	1.20		VI	6.76		bVII	.25
	III	1.20		vi	6.76			
	#iv ^{d7}	1.20		ix	4.26			
	v	1.20		I ⁷	3.00		bV	18.30
	VI	1.20		III	2.75		VI	15.17
	vii ^{o7}	1.20		IV	2.50		i	14.28
	bII	.96		ii	2.50		iv	11.60
	iii	.72		ii ⁷	2.25		III	8.92
	#iii ^{d7}	.72		#i ^{d7}	1.75		I	6.69
	#iii ^{d7}	.48		ii ^o	1.75		I ⁷	4.91
	#iiIt	.48		#iv ^{d7}	1.75		V	3.57
	bIII	.48		VII	1.50		v ^{d7}	3.57
	IV ⁷	.48		#v ^{o7}	1.25		id ⁷	3.12
#v ^{d7}	.48	IV ⁷	1.25	bVI	2.67			
bvii	.48	#i ^{7G}	1.00	IV	2.23			
viiIt	.48	iii	.75	bIII	2.23			
iIt	.24	#iv ^o	.75	iii ^{d7}	1.33			
#id ⁷	.24	bVI	.75	vii ^{o7}	.89			
ii ^o	.24	#vi ^{d7}	.75	it	.44			
#ii ^{7G}	.24	i ⁷	.75	i ^o	.44			
				ii ^{o7}	.44			

TABLE XI--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
III	iii	.44	bIII	#vi ^o 7	.33	#IV ⁷	i ^o	1.53
	iii ^o	.44		#vi ⁷ G	.33		i7	1.53
	bv	.44		vii ^d 7	.33		#iv ^d 7	1.53
	(#)VII	.44		vii ⁷	.33		#iv ⁷ G	1.53
	ii ^d 7	.44		bVII	28.84		#v ^d 7	1.53
	VII	.44		bVI	13.46		VI	1.53
	VII	37.70		bII	11.53		#vi	1.53
	VI	10.43		ii ^d 7	7.69		bVII	1.53
	i	6.40		I	3.84		i ^o	100.0
	iv	5.72		iii ^d 7	3.84		bV	bII	79.66
	bII	4.71	#iv ^o	3.84	I	I	6.77	
	V	4.71	v	3.84	iv ^d 7	II	5.08	
	vi	4.04	v ^o 7	3.84	II	VI	3.38	
	bVII	3.36	vi ⁷ G	3.84	VII	bVI	1.69	
	v	2.70	VII	3.84	II	vi	1.69	
	ii ^o	2.35	II	1.92	VI	III	20.47	
	I	2.35	ii ^o	1.92	i	i	17.71	
	#iv ^d 7	2.02	iv	1.92	V	V	13.77	
	ii ^d 7	1.68	bvii	1.92	bII	bII	5.11	
	iii	1.68	bv	1.92	v	v	4.72	
	II	1.01	bVII+	1.92	I ⁷	I ⁷	3.93	
	ii	1.01	IV ⁷	I ⁷	i	III+	3.54	
	#ii ^d 7	1.01	I ⁷	18.46	iii	I	3.14	
	ii ⁷	.67	i	15.38	VII	v ^o	2.75	
	#ii ^{It}	.67	iii	7.69	III	iv	2.75	
	IV	.67	VII	6.15	bVI	VII	2.36	
	bVI	.67	III	6.15	iv	II	1.96	
	vii ^o	.67	iv	6.15	vii ^o 7	iii	1.96	
	vii ^o 7	.67	I	4.61	I ⁷	IV	1.96	
	I ⁷	.33	IV	4.61	#ii ⁷ G	bV	1.96	
	#ii ⁷ G	.33	V	4.61	ii ^d 7	vi	1.96	
	iii ^d 7	.33	v	4.61	iv ^d 7	bii	1.57	
	iv ⁷	.33	(#)IV ⁷	3.07	#v ^d 7			
v ^d 7	.33	ii	3.07					
#v ^d 7	.33							

TABLE XI--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
	#v ^d 7	1.57	VII	III	14.10		bIII+	.41
	ii	1.18		iv	14.10		vi ^o	.41
	IV ⁷	1.18		i	13.27		vi ⁷	.41
	v ^d 7	.78		IV ⁷	8.71			
	i ⁷	.39		VI	6.22	bVII	i	17.24
	iii ^o 7	.39		IV	4.98		bIII	13.79
	bVII ^d 7	.39		iv ⁷	4.56		IV ⁷	10.34
	vii ^d 7	.39		v	4.14		VI	8.62
	#v ^o 7	.39		iii	3.73		ii	8.62
	vii ^o	.39		#vi ^d 7	3.31		IV	6.89
				bII	2.90		V	5.17
bVI	bIII	20.00		#iv ^o 7	1.65		bII	5.17
	i	15.38		ii ^d 7	1.24		v ⁷	5.17
	V	14.64		ii ^o	1.24		I ⁷	1.72
	I	10.70		I	.82		#i ^d 7	1.72
	bII	9.23		bV	.82		iii	1.72
	III	4.61		vii ^o	.82		iiiIt	1.72
	v	4.61		i ⁷	.82		iv ^o 7	1.72
	v ^d 7	3.07		#i ^d 7	.82		bVI	1.72
	ii ^o	1.53		ii	.82		vi ^d 7	1.72
	iii	1.53		ii ^o 7	.82		vi ^o	1.72
	iii ^o 7	1.53		bIII	.82			
	iv	1.53		iv ^o 7	.82	(#)VII	I	31.25
	bV	1.53		bVI	.82		iii	18.75
	v ^o	1.53		vi	.82		V	12.50
	bv	1.53		vi ^d 7	.82		II	12.50
	VII	1.53		vii	.41		vi	6.25
	vii ^d 7	1.53		I ⁷	.41		IV	6.25
				i ^d 7	.41		#iv ^d 7	6.25
(#)VI	III	66.6		II	.41		III	6.25
	#vi ^o 7	33.3		#ii ^o	.41			

TABLE XII

PERCENTAGES OF CHORDS FOLLOWING SECONDARY DOMINANTS
IN THE SOLO WORKS FOR PIANO BY BRAHMS

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	
I-7	IV	41.50	II	#vi ^o 7	.24	bII	#ii ^d 7	.25	
	iv	28.15		bVII	.24		#iv ^o 7	.25	
	ii	4.36		V	54.13		#ivIt	.25	
	bII	3.64		v	10.77		#iv ⁷ G	.25	
	II	3.15		i	8.02		v ^o 7	.25	
	IV ⁷	2.91		I	6.26		bv ^o 7	.25	
	VI	2.18		I ⁷	3.03		#v ^o 7	.25	
	#i ^d 7	1.45		vi	1.50		bVI	.25	
	#iv ^o	1.21		ii	1.25		VII	.25	
	ii ^o 7	.97		iii	1.25		vii	.25	
	#ii ^d 7	.97		iv	1.25		vii ^o	.25	
	vi	.72		vii ^d 7	1.25		vii ^o 7	.25	
	III	.72		VI	1.25				
	I	.48		III	.75		bII	bV	21.07
	I+	.48		#vi ^o	.75		V	V	19.28
	ii ⁷	.48		#i ⁷ G	.50		i ^o	i ^o	14.34
	iii ^d 7	.48		ii ⁷	.50		VI	VI	6.72
	#iv ^d 7	.48		ii ^o 7	.50		III	III	6.27
	V	.48		bIII	.50		iv	iv	4.48
	#vIt	.48		IV	.50		VII	VII	3.58
	#v ⁷ G	.48		iv ^o	.50		bIII	bIII	2.69
	vi ^o	.48		#iv ^d 7	.50		I	I	2.24
	#vi ⁷ G	.48		bV	.50		I ⁷	I ⁷	2.24
	VII	.48		vi ^o	.50		vii ^d 7	vii ^d 7	2.24
	vii ^d 7	.48		(#)VIIt	.50		vii ^o	vii ^o	1.79
	#i ^o	.24		#viiIt	.50		bVI	bVI	1.79
	#i ⁷ G	.24		viiIt	.50		bii	bii	1.34
	iii ^o	.24		#i ^d 7	.25		ii ^o	ii ^o	.89
	#iii ^d 7	.24		ii ^o	.25		IV	IV	.89
	bV	.24		#ii ^o	.25		v	v	.89
v	.24	ii ^d 7	.25	v ^o	v ^o	.89			
#v ^d 7	.24			bVII	bVII	.89			

TABLE XII--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	
III	iv ^{d7}	.89	bIII	#iv ^{d7}	.65	IV ⁷	VII	2.04	
	i ^o	.44		v	.65		VII	35.59	
	bII+	.44		bVI	.65		#iv ^{d7}	13.55	
	#iii ^{d7}	.44		vi ^o	.65		bVII	8.47	
	#iv ^{d7}	.44		vi ^{d7}	.65		II	8.47	
	v ^{d7}	.44		vii ^{It}	.65		iii	8.47	
	bv	.44		i ⁷	.32		iv	5.08	
	#vi ^{d7}	.44		#i ^{It}	.32		VI	5.08	
	vii ^{7G}	.44		ii ^{o7}	.32		I	5.08	
	#ii ^{7G}	.44		ii ^{d7}	.32		#iv ^{7G}	3.38	
	bvii	.44		iii ^o	.32		ii ^o	1.69	
	VI	17.10		#iv ^o	.32		III	1.69	
	VII	12.17		#v ^{d7}	.32	V	1.69		
	iv	9.21		#v ^{7G}	.32	vi	1.69		
	i	8.88		(#)VI	.32	bvii	1.69		
	bII	6.57		#vi ^o	.32	iv ^o	1.69		
	vi	5.59		#vi ^{o7}	.32	#)IV ⁷	V	100.0	
	V	5.26		vii ^o	.32		bV	bII	69.49
	II	3.28		vii ^{It}	.32		VI	5.08	
	vii ^{d7}	2.96		iii ^{It}	.32		bv	5.08	
	ii ^o	2.63		(#)VII	.32		bV+	5.08	
	i ^{d7}	2.30		bVI	22.44		I	3.38	
	III+	2.30		bVII	18.36		iv ^{d7}	3.38	
	ii	1.97		bII	12.20		VII	3.38	
	IV	1.97		ii ^{d7}	8.16		i ^{d7}	1.69	
	I ⁷	1.64		iv	8.16		ii ^{d7}	1.69	
	iii	1.64		v	8.16		#iii ^{d7}	1.69	
	IV ⁷	1.31		vi ^o	6.12		VI	bII	13.30
	vi ^{o7}	1.31		vii ^o	4.08	III		11.29	
	#i ^{7G}	.98		I ⁷	4.08	II		8.46	
	I	.65		iii ^{d7}	2.04				
	bii	.65		v	2.04				
#iii ^{d7}	.65	v ^{o7}	2.04						

TABLE XII--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
	ii	7.66		#iv ^{7G}	8.19		vii	2.10
	V	6.85		II	6.55		IV	1.68
	VII	6.85		IV ⁷	4.91		#vi ^{d7}	1.68
	v ^o	5.24		v ^{d7}	4.91		I+	1.68
	i	4.83		vi ^o	3.27		I	1.26
	iv	4.43		III	3.27		IV ⁷	1.26
	ii ^{o7}	3.62		ii ^{o7}	3.27		vii ^o	1.26
	ii ^o	2.82		ii ⁷	3.27		v	.84
	#vi ^{d7}	2.82		ii ^o	3.27		bIII	.84
	I ⁷	2.01		I	3.27		i ⁷	.42
	i ⁷	2.01		i	3.27		#i ^{7G}	.42
	III+	2.01		VII	3.27		bII	.42
	v	2.01		iii ^o	1.63		ii ^o	.42
	bVII	2.01		iv	1.63		ii ⁷	.42
	bii	1.61		#iv ^{d7}	1.63		ii ^{d7}	.42
	#iv ^{7G}	1.61		bVII ^{d7}	1.63		#iii ^{d7}	.42
	vii ^{d7}	1.20		vii ^{d7}	1.63		#ix ^o	.42
	#ix ^{It}	1.20		vii	1.63		#v ^{7G}	.42
	IV ⁷	.80		v ^{o7}	1.63		bVI	.42
	ix ^o	.80		I ⁷	1.63		vi	.42
	i ^{d7}	.40					vi ^o	.42
	#i ^{d7}	.40	(#)VI	ii	40.0		vi ^{d7}	.42
	ii ⁷	.40		IV	40.0		#vi ^{o7}	.42
	ii ^{d7}	.40		v	20.0		vii ^{d7}	.42
	IV	.40						
	#iv ^{d7}	.40	VII	III	46.63	bVII	bIII	22.41
	VI+	.40		V	10.08		III	17.24
	vii	.40		iii	7.56		V	13.79
	vi	.40		I ⁷	5.04		vii ^{d7}	8.62
	vii ^{It}	.40		i	2.94		i	5.17
				II	2.52		bii	3.44
bVI	bIII	14.75		iv	2.52		VI	3.44
	bII	11.47		VI	2.52		I ⁷	1.72
	V	9.83		#iv ^{d7}	2.10		i ⁷	1.72

TABLE XII--Continued

Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent	Secondary Dominant	Chord	Per Cent
II		1.72		iv ^o 7	1.72		bvii	1.72
bII		1.72		iv ^d 7	1.72			
ii		1.72		#iv ^d 7	1.72	(#VII	iii	42.85
ii ⁷		1.72		v	1.72		III	21.42
IV ⁷		1.72		#v ⁷ G	1.72		V	14.28
iv		1.72		bVII+	1.72		vii	14.28
							bII	7.14

SOLO WORKS FOR PIANO OF BRAHMS

Sonata in C Major, Op. 1
Sonata in F# Minor, Op. 2
Scherzo in E^b Minor, Op. 4
Sonata in F Minor, Op. 5
Variations on a Theme by Robert Schumann, Op. 9
Ballades, Op. 10, Nos. 1,2,3,4
Variations on a Theme by the Composer, Op. 21, No. 1
Variations on a Hungarian Song, Op. 21, No. 2
Variations and Fugue on a Theme by Handel, Op. 24
Variations on a Theme by Paganini, Op. 35
Piano Pieces, Op. 76, Nos. 1,2,3,4,5,6,7,8
Rhapsodies, Op. 79, Nos. 1,2
Fantasies, Op. 116, Nos. 1,2,3,4,5,6,7
Intermezzi, Op. 117, Nos. 1,2,3
Piano Pieces, Op. 118, Nos. 1,2,3,4,5,6
Piano Pieces, Op. 119, Nos. 1,2,3,4
Gigue No. 1
Gigue No. 2
Sarabande No. 1
Sarabande No. 2
Theme and Variations
Hungarian Dances, Nos. 1,2,3,4,5,6,7,8,9,10

SOLO WORKS FOR PIANO OF DVOŘÁK

Polka in E Major (1860)
Minuets (1876), Op. 28, Nos. 1,2
Dumka in D Minor (1876), Op. 35
Tema con Variazioni (1876), Op. 36
Scottish Dances (1877), Op. 41
Silhouettes (1879?), Op. 8, Nos. 1-12
Waltzes (1879-80), Op. 54, Nos. 1,2,3,4,5,6,7,8
Eclogues (1880), Op. 56, Nos. 1,2,3,4
Souvenirs (1880-81), Nos. 1,2,3
Impromptus, Nos. 1,2
Compositions for Piano (1880), Op. 52, Nos. 1,2,3,4
Mazurkas (1880), Op. 56, Nos. 1,2,3,4,5,6
Impromptu in D Minor (1883)
Humoresque in F# Major (1884)
Dumka and Furiant (1884), Op. 12
Poetic Tone-Pictures (1889), Op. 85
Suite in A Major (1894), Op. 98
Humoresques (1894), Op. 101, Nos. 1,2,3,4,5,6,7,8
Berceuse and Capriccio (1894)

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